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AMAZING STORIES

Science Fiction

Vol. 8

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No. 8

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Our Cover

depicts a scene from the story entitled "Time's Mausoleum"
by Neil R. Jones; drawn by Morey.

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AMAZING STORIES

THE MAGAZINE OF SCIENCE FICTION

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No. 8

T. O'CONOR SLOANE, Ph.D., *Editor*
Editorial and General Offices: 222 West 39th Street, New York, N. Y.

Extravagant Fiction Today Cold Fact Tomorrow

Electric Units in the Home

By T. O'CONOR SLOANE, Ph.D.

RECENTLY the number of words in the different modern languages have been compared and it is found that the number in the English language is far more than in any other of the more familiar tongues. It makes one envious to compare our strange language, that Richard Grant White in one of his books, called "the grammarless tongue," with the German for instance where everything is cut rigorously to a pattern. The spelling of German is utterly simple, that of the romance languages is perhaps still simpler. It would be hard to imagine a Spanish group indulging in a spelling bee, while in English-speaking countries they are quite an amusing exercise or almost what we may call a game. English may be a grammarless tongue, but it is certainly an unorthographic one. And to its multitude

of words scientific terms are perpetually being added, many of which refer to the daily household life, and which it is fair to say, are mysteries to many who use them constantly. Especially is this applicable to the many units of various kinds of electrical measurement.

When one handles an electric light bulb and looks at the top, he will see there an almost illegible label. It may read 115V with perhaps 75W and these are your guides in purchasing the lamp. But the innocent purchaser, in most cases, does not know exactly what they are supposed to tell him. The "V" stands for volts. One of the early electrical investigators of nearly 150 years ago was named Volta, so when they wanted a name for this electric unit, they very properly honored him by using his name as the origin of the term.

The volt is of a sort of personal interest as well as practical and scientific interest. It is a unit of electric pressure acting to force electricity through a conductor, usually a wire; it may be termed electric pressure or electromotive force. Electromotive force is required to drive a current through a conductor, just as there has to be pressure of water in the pipes, to force water through them. Water pressure may be measured by pounds to the square inch. It may be used to force water through a garden hose for instance. We know that if there was no pressure the water would not go through a pipe, and if there was high enough pressure the water might be driven over the top of a house. A convenient unit for water pressure is the foot. This means the pressure due to a vertical volume of water a foot in height. If this water is contained in a vertical pipe, no matter whether large or small in diameter, the pressure it exerts per square inch will vary precisely with the height of the column of water. Thus we speak of a foot-pound of water or a hundred foot-pounds to indicate its weight and pressure. The unit of pressure is the height of the column.

Now, in electric lighting and power systems, we need a unit to express the pressure, as it may be termed, of the force which urges a current through a conductor such as the wires we see in every building leading to and supplying lamps. This unit is what is called the volt. If your lamp has 110V marked upon its top, that means that it should be supplied with current at a pressure of 110 volts. This is simple enough on its face, the only trouble is that it is hard to say what a volt is. The fundamental difficulty at the foundation or base of all electric units is that we can say with perfect certainty that "electricity" is an undefinable word. We do not know what it is. Volts of pressure or volt-

age, as it is called, sends the energy of Niagara Falls over hundreds of miles of country through wires carried on standards high in the air. So the best we can do is to figure in our imaginations that electricity acts like a current of air, or of steam, or of water, in a pipe, the wire representing the pipe.

We can see that our predecessors were justified in using the metaphorical if incorrect term of "fluid" for electricity and in speaking of the flow of electricity, just as to-day we speak of a current of electricity. It seems to be the case where we have got to say something, so the word current is universally used and the term flow is also used, while the picturesque term, the electric fluid, is pretty well dropped from the popular nomenclature of the science.

In practise, the voltage of a lamp may differ slightly from the voltage of the part of the circuit to which it is connected. It is fair to say that it is an exceptional case when a lamp gets its rated voltage impressed upon it. If you want to be accurate about it, you may get a voltmeter and connect it to the two leads of your circuit and see what voltage they give you and then get a lamp according to what its reading is. But the voltage delivered to a lamp, or, more correctly impressed upon it, is affected by other lamps on the same circuit, so after all it is only an approximation to the correct pressure. The simplest way is to go to the Public Service Company and get them to tell you what lamps to use. So all you have to do when you read the little inscription on the top of your lamp is to think of the voltage as the pressure that forces the electric current through the filament of your lamp, just as the water pressure in the pipes in your house forces the current of water out of the faucet.

It is a sort of comfort that as there is no accurate definition of electricity

known, we have to be content to use a metaphorical expression for some of the electric units.

This is a good place to speak of a blunder in terminology that was very frequent some years ago, and which, undoubtedly, is still extant.

Suppose your water faucet is turned off so that no water flows, the pressure is still there, now if you open the faucet a current of water passes and that current you may measure in gallons per minute or per hour. Suppose your water has a pressure of fifteen pounds to the square inch. No one in his senses would say that he would have a current of fifteen pounds to the square inch, because that would mean absolutely nothing. Yet for years the absurd expression of a current of some voltage, perhaps a "110 volt current," persisted and was constantly used. In speaking of a current of electricity such expressions as a "110 volt current" or a "thousand volt current" using the unit of pressure as a unit of current were employed. Those of us who can look back far enough can recollect how this error was almost universal. The majority of practical electricians would unhesitatingly speak of a "110 volt current," when they certainly would not employ the "fifteen pounds pressure to the square inch" to describe a current of water.

There was another old time electrician of nearly 150 years ago named Ampere, so when a unit of electric current needed a name, it was called an ampere. An ampere indicates the amount of electricity that flows through a conductor per unit of time. It is a rate-unit. There are two words beginning with the letters "C". The volt may be said to belong to one of them, "circuit," and the ampere to the other, "current." In your house you may have a connection with a 110 or 120 volt circuit and when a current passes through your lamps, or when none

passes, there is always electric pressure in your house circuit. Your plant, as it may be termed, is part of a circuit of a definite number of volts or definite voltage. If your lamps are all out, no current passes, but the pressure is still there, so it is evident how absurd it is to speak of a 110 volt current.

We have seen that the two words alluded to, beginning with the letter "C" are the word "circuit" and the word "current." When the lamps are all out, there is no current. When the lamps are on there is current measured by amperes, so we may have any number of amperes on a circuit operated by a pressure of a definite number of volts. We may have for instance a hundred volts circuit passing twenty, thirty or any number of amperes of current. The expression twenty ampere current is strictly correct. The expression twenty volt current is utterly wrong, but it formerly required very active persuasion to make people believe that this was the case. But think how much better we would understand all this if we only knew what electricity is.—But we do not.

Now there is a compound unit which has an interest for all of us which is accentuated every month in most cases by a bill. It is the watt, named from the famous Scotch engineer, James Watt. A house is supplied with a current of electricity of some number of amperes varying with the use made of it by the tenant, and the pressure is maintained nearly constant by the Electric Light & Power Company. A number of amperes are supplied and a compound unit is formed by multiplying amperes by the volts. The compound unit is the volt-ampere or the watt. Unfortunately this unit is rather small for house consumption, so the bills are in kilowatts, which means a thousand watts. If all the lamps in your house are turned off, you have the electric pressure or volts always

there, but there is no charge for them. If you turn on your lamps, so that current flows, then you have to pay for the number of units represented by a volt multiplied by an ampere and by the time you used it, which unit is the watt-hour.

When you pay your bill for electric service, it is charged at an approximately definite voltage, multiplied by the amount of current you have taken and the number of hours during which you have used it. This is done by an electric meter

which contains a little motor, and moves hands over dials like those of a clock or a gas meter as long as current is used.

There are nearly seven hundred and fifty watts to a horsepower, so if you are charged with one kilowatt-hour on your bill, it means that you have used the equivalent of one and a third horsepower for an hour, or it might be one-tenth of one and a third horse power for ten hours and so on. This is simple arithmetic.

Alcohol in the Human System

A SOLUTION in water of potassium permanganate is of a deep violet color. If alcohol is added to its solution, it will be reduced giving an insoluble precipitate and a colorless solution. The reaction can be carried out with extremely small quantities. If the permanganate solution is of known strength the amount of alcohol can be determined by the amount of permanganate decomposed. This determination of alcohol has been applied to human blood. A few drops of blood are drawn into a hypodermic syringe. Two drops of the blood are placed in a little water, proteins are eliminated and the alcohol is distilled off and collected in a flask containing distilled water. The volume of blood used must be known exactly. Then to the dis-

tillate potassium permanganate solution of known strength is added from a burette. As it is added the alcohol reduces it and it loses color. When the last drop produces a faint pink the reaction is complete. The percentage of alcohol is given by the amount of the standard solution of potassium permanganate required to give the pink color, marking the end of the reaction.

The simple determination was applied to the human body. It was found that alcohol in the proportion of 1/100,000 of the weight of the body was present in subjects who never drank alcoholic liquids. Alcohol is generated in the body.

Two drops of blood are enough for the test.

THE END

Time's Mausoleum

(A Professor Jameson Story)

By NEIL R. JONES

The author gives us again what he calls a Professor Jameson story. These narratives have already won the favor of our readers, and we are sure that this one will have a special interest for them, as the rather wonderful Professor Jameson, operating a robot structure by means of his human brain, develops a leadership in many adventures preserving what we may call his static nature throughout.

Illustrated by MOREY

Preface

WANDERER of the cosmos, mariner of the seas of space, convert to the ranks of the machine men of Zor, Professor Jameson, known to his metal companions as 21MM392, found before him a glamorous future among the suns and worlds of deep, unending and mysterious space.

More than forty million years ago, he had lived as a man—a flesh and blood organism of the planet earth. Fired with the inspiration of eternal preservation after death, Professor Jameson had looked to the depths of space as his grave, his coffin a space rocket. The great art of the Egyptians in preserving their dead seemed less than a second compared to a year beside the results obtained by the professor. He knew that, in the depths of space, organic material remained free from the ravages of bacteria and other earthly influence.

He had died in 1950. A nephew, Douglas Jameson, had carried out the terms of his will, and, as the professor had anticipated, his rocket became a satellite of the earth. What Professor Jameson had not anticipated, however, was

his awakening to find his brain encased in a metal head equipped with a complete circle of mechanical eyes, a supplementary eye looking straight upward from the peak of his head. He found himself possessed of a metal, cubed body with metal legs and tentacles.

Machine men of Zor, who had long ago searched after immortality by removal of their brains from organic bodies to mechanical counterparts, had come across the professor's rocket in the shadow of the dying world. With these adventurers of space, who had made him one of them, stimulating his dead brain cells into activity once more, Professor Jameson embarked upon a life of eternal exploration among the worlds of the universe.

Countless adventures had befallen him. He had seen double suns of contrasting colors, he had plumbed the depths of a different plane of dimension; death had stalked him closely in an attempt to destroy his one vulnerable point, the metal head, yet he still lived. He had seen his metal companions die. He had found himself cast adrift in space, helpless. The latest adventure had been inside a world of water.

The Zoromes had found the inhabi-



Professor Jameson saw his metal comrades clearly as they moved about the space ship, as if nothing stood between himself and them, yet all was silent.

tants of the hydrosphere menaced and held in ruthless subjection by the Uchke, a race of cruel oppressors from a neighboring planet. The Plekne were freed of their bondage on the home planet, and the machine men then invaded the world of the Uchke to render their future operations harmless to the Plekne.

CHAPTER I

Planet of the Uchke

THE Uchke were conquered. Their planet lay at the mercy of the metal invaders from the planet Zor. A few battles had decided the entire issue, and the Uchke had wisely yielded themselves. Their cities, except those few which had born the brunt of the machine men's power, were spared, for the Zoromes had no intentions of annihilating the Uchke. To remove their menace against the Plekne was sufficient. To this end, Professor Jameson, 744U-21, 6W-438 and others of the machine men conferred with the high officials among the Uchke.

It was a puzzle to the professor how these bestial creatures could conceive the high plane of civilization which lay about them. They seemed little more than brutes. If hair had grown on their faces, they would have looked much like gorillas, except for the more prominent forehead which suggested intelligence. But to the professor, they did not seem beings of the order of intelligence he might expect to have conquered space and made themselves masters of the distant hydrosphere. The bodies of the Uchke were small and were out of proportion to their heads. Clawed digits terminated the upper appendages, and the creatures were afforded movement on two stumpy legs.

The machine men held mental con-

versation with the leaders of the Uchke.

"Your space ships are to be destroyed so that you may never again cross space and molest the Plekne," said 744U-21. "All knowledge you possess of space navigation must also be destroyed."

In the minds of the Uchke, the machine men read the reply.

"We do not design the space ships; neither do we possess the knowledge of space flying, though we are proficient in the operation of the ships. The Qwux show us everything."

"The Qwux?" queried Professor Jameson, a light breaking in upon his mind. "Then you are not the rulers of this planet, after all."

"We are the rulers of this world!" the Uchkek flashed, forgetting momentarily that he spoke to the planet's conquerors.

The proud manifestation of authority was disregarded by the Zoromes as they probed to the crux of the mystery.

"Who are these Qwux?" 6W-438 demanded. "Where do they live?"

"They live on this world, and they are those among us who deal in science."

Though the machine men failed to gain an accurate picture of the Qwux in the oddly fashioned minds of the Uchke, the impression was sufficiently strong for them to conceive of another species. 744U-21 brooked further questioning.

"If they are your scientific thinkers and masters, take us to them," he demanded.

"Not our masters," the Uchkek protested. "We are their masters."

With this paradoxical statement, the matter was dropped. A fast aerocar took them over the near-by mountain peaks to a huge building which loomed high upon a cliff overlooking a deep valley. The car came to rest at an entrance of the mighty edifice.

Professor Jameson, 744U-21 and 6W-438 were ushered into the building. In-

stantly, the machine men were all interest. The great structure was literally a beehive of laboratories, scientific workshops and experimental chambers.

"The Qwux live here," said the Uchkek. "These are their laboratories. They live in the top levels. It is one of their rest periods."

The machine men saw no one except Plekne slaves and a few Uchke overseers.

"We shall take you to Zlestrm. He is greatest in knowledge among the Qwux. They look up to him. We give Zlestrm all our orders."

The last remark was given with an egotistical display of authority which puzzled the professor. If another race on the planet possessed such faculties of power, why did they, even though in the minority, allow these ignorant creatures to overrule them and dictate orders?

Elevators lifted the machine men and their guide high into the upper levels of the great building which rivalled the mountain peaks which surrounded it. They were ushered into an ante-room, and never in all his life, nor in all his cosmic travels, had Professor Jameson ever gazed upon such luxury and elegance as that which surrounded him.

CURTAINS of thin woven metal rustled softly at the end of the room. They parted, and into the room stepped a creature whom the machine men readily surmised was one of the Qwux. A pair of long, thin legs supported an oval body, which, like the Uchke, boasted upper appendages ending in long digits. The fingers of the Qwux, however, were more refined in shape and color. It was apparent instantly that they were of a higher intelligence than the Uchke. Their heads and bodies were more in accord with each other than those of the brutal conquerors of the hydrosphere.

"I have been expecting you, men of

metal," said the Qwux, "I am Zlestrm."

"So we have learned," replied 744U-21. "And you are the real figurehead, the ruler of this planet's destiny?"

Zlestrm spread his palms in a deprecating gesture which Professor Jameson recognized as characteristic of his own long-gone, long-dead race.

"The Uchke rule," said Zlestrm. "We Qwux are the brains of this world, however, if I may say it."

Zlestrm bent an apologetic look in the direction of the Uchke. In his expression there lingered a trace of subtle humor. The Uchke failed to gather any significance from the conversation. The machine men bent their concentrations on Zlestrm, and the flow of thought waves were far above the duller perceptions of the Uchke.

"How did such a strange reversal like that ever occur?" Professor Jameson asked.

"Long ago, the Qwux were the rulers of the planet. We were greater in numbers than we are now. The Uchke were little more than roving brutes of the forest. The Qwux were not fighters. We loved luxury. The Uchke finally banded together and overthrew us."

"But with all this power, you could easily revolt and become masters of the world again!" 744U-21 expostulated.

"Yes," replied Zlestrm. "We could easily have done that. But why should we? We have a pact with the Uchke which gives us all these enjoyments we so dearly love. We have no fighting or working to do. They, with their boasted power, do all of this. The Uchke are satisfied because it is through our mentality that they possess the great cities you saw."

"We blew up a few," mentioned 6W-438, edging toward the vital point. "The Uchke ceased their fighting after that."

"Yes—on our advice," Zlestrm replied. "I suppose your visit concerns the Plekne.

Poor creatures. It is well that you freed them from bondage. The Qwux were never amenable to the situation, but the Uchke would have it so, and——"

Zlestrm made a significant gesture which took in the luxurious surroundings about them. It was suggestive that rather than stir up trouble with the Uchke and place their indolent ease in a precarious position, the Qwux would permit almost anything which did not interfere with them. Their rule was to follow the path of least resistance.

"But suppose the Uchke some day learn all your scientific secrets, or reach a stage where they may believe themselves superior to you?" the professor asked.

"That day will never come!" Zlestrm exclaimed triumphantly, with a bit more fire than the machine men had previously credited to him. "Our secrets are handed down hereditarily from one generation to the next. Each of the Qwux specializes in a branch of science. Were it not for the fact that my ancestor handed down to me the fundamental secret of the preparation of space ship propellant fuel, our ability for space navigation would die out."

"You alone hold that secret?" queried 744U-21.

"I alone do," was Zlestrm's proud answer.

The machine men reached a simultaneous decision.

"The easiest and most effective solution to our problem," the professor observed.

"Zlestrm," 744U-21 addressed the Qwux. "We are leaving your planet without destroying anything—not so much as a single space ship."

"That is magnificent of you," Zlestrm fawned.

"THERE is to be no more blood shed," the machine man added.

Zlestrm could scarcely believe his ears.

"Only one thing," said 744U-21.

"And what is that?" the Qwux asked.

"You are coming with us on our journey into space."

On the face of Zlestrm, blank surprise was replaced by consternation.

"But in that case the space ships of this world will soon become useless—unless I convey my secrets to another."

"You will convey no secrets," warned 744U-21. "You are our prisoner."

"This world will carry on without you," said Professor Jameson, "and without the faculty of space-navigation to the hydrosphere."

The machine men spent several days upon the planet of the Uchke. During that time, Zlestrm was kept in custody aboard the space ship of Zor. At first he bemoaned his fate, but gradually he grew reconciled to his prospects on assurance that all conveniences necessary for his subsistence during his lifetime stay with the machine men of Zor would be granted him. He finally reached a point of enthusiasm where he actually looked forward to the endless trip—an endless trip for him. The colorful tales of his captors were partly responsible for this.

"You will be dead before we ever reach Zor," 744U-21 told him. "Your lifetime shall have expired before the home world is reached."

Zlestrm was offered the privileges of becoming a Zorome but he shrank from the idea of an operation on his brain, with its subsequent removal to a metal head. Though himself a savant of high standing in science, Zlestrm's timid nature did not inspire him to submit himself to any possible chances of harm.

"There is one additional favor I would like granted," said the Qwux.

Professor Jameson was instantly reminded of the deep cushioned settee which Zlestrm had been persistent in having moved aboard his airtight compartment in the space ship.

"What is it?"

"I have an invention on which I am working—have almost completed. In fact, it is so nearly complete that I have given it several tests and found it quite successful."

"It sounds interesting," said 6W-438.

"What is your invention?"

"A time traveler."

The machine men were visibly moved.

"A time machine?"

"Something like that," replied Zlestrm, his mind catching the picture of intricate, fabled mechanism the thoughts of the machine men had conjured up.

"But it is impossible," stated the incredulous professor. "I have often heard the theory discussed. It is like the irresistible force hitting an immovable body, a conflicting impossibility."

"Actual time traveling is an impossibility," Zlestrm admitted, "that is, a physical impossibility."

"You probably mean that mental time traveling is possible, memory, for example," Professor Jameson suggested.

"Not exactly that," said Zlestrm.

"With my time traveler it is possible for me to see actual occurrences I never knew or heard about. I have looked back into time, but looking ahead—that is where my time traveler still lacks in perfection."

"Bring your machine and the necessary equipment with you," said the professor. "There are reasons, well timed, which may afford me a specific use for your time traveler."

And thus it happened that the machine men of Zor took an exile with them when they left the planet of the Uchke, an exile whose sole loss represented future safety for the Plekne in their drifting kelp cities of the hydrosphere.

Zlestrm dwelt in an air-tight compartment furnished with an atmosphere rejuvenator and reserve supplies of his natural air sufficient for the balance of

his lifetime which would be spent in cosmic travel. Entrance to and from his compartment was gained by means of an air-lock. When Zlestrm joined the machine men in other parts of the ship, he wore a lightly constructed space suit.

Aided by the machine men, he worked a good share of his time on the time-traveler. Professor Jameson seemed the most interested of the Zoromes. As 29G-75 had previously reminded him, they would soon pass the planet earth, where the machine men had discovered the professor's rocket satellite. The professor was eager for the completion of the time traveler before they reached the solar system.

Zlestrm finally announced that the time had come for tests to be made. 29G-75 consulted the constellation chart for the nearest system of planets on which to land and conduct the tests. Zlestrm, however, told the machine men that it was unnecessary. The nature of his invention made it possible for them to try the time traveler inside the space ship.

It was a queer looking apparatus which Zlestrm had put together, yet it appeared to be simply constructed. The mechanism was enclosed in a large container mounted upon a glassy, translucent base. This base was prepared from a tough, viscous substance which seemed nothing more than an exceedingly hard composition of jelly, not unlike India rubber. Several cone-shaped vents protruded from the container, while a small platform was built entirely around it.

"WHO will conduct the test with me?" asked Zlestrm. "The platform will easily hold two of you besides myself."

Professor Jameson stepped forward followed by 41C-98. They took their places on the platform where Zlestrm instructed them to stand. The Qwux

then turned to the controls on the top of the container. Out of the cone-shaped vents issued a filmy cloud which gathered about the time traveler and the three who stood on its platform. Like a billowing cloud, it grew and spread over them until their comrades were lost from sight beyond the heavy mist.

As the vapor cleared, the professor saw beside him 41C-98 and Zlestrm still in their same positions on the platform. But all around them lay the heavy mist like a hollow sphere. Indeed, it seemed to Professor Jameson as if they were inside a large rubber ball. Everything beyond lay invisible.

"We must wait for the vapor to solidify," said Zlestrm. "Then we shall travel back in time."

Gradually through the cloudy mist the dim shapes of the machine men and parts of the space ship became visible.

"The vapor is disappearing!" 41C-98 exclaimed.

"No—it is solidifying," corrected Zlestrm. "Soon, it will be transparent and we can see outside as clearly as if it were not there. 744U-21 and the others, however, will see only a large white globe resting on the floor of the space ship. The transparency works but one way."

Professor Jameson saw his metal comrades clearly as they moved about the space ship, as if nothing stood between himself and them, yet all was silent. He heard not a sound beyond the slight movements of Zlestrm and 41C-98. He mentioned the fact.

"Oh, yes!" exclaimed Zlestrm. "I forgot about the audiophone!"

He adjusted the controls, and there broke into the professor's hearing the clatter and rustle of metal feet on the metal floor and the rustling of tentacles.

"Can they hear us?"

"No," replied the Qwux.

He pulled several levers and the scene beyond the time bubble shifted with such

amazing rapidity that there was visible only a conglomeration of flickering shadows which resolved into a dull, quivering grayness. A terrible clattering din arose to a shriek and wail. Zlestrm immediately shut off the audiophone and profound silence replaced the bedlam.

"The scene you are about to witness took place some time in the past before your space ship came to the hydrosphere," Zlestrm explained, busy at the controls of the time traveler.

CHAPTER II

The Backward Path

THE scene cleared. Professor Jameson saw the machine men gathered about the ports of the space ship. Through the ports came the mingled effulgence of blue and orange light. Professor Jameson was surprised to see himself standing beside 25X-987 who had long been dead.

"The planet of the double sun!" he exclaimed.

"Can we hear them?" asked 41C-98.

"Of course," Zlestrm replied, and he turned on the audiophone once more.

Sounds of the space ship, sounds from the past they were examining, came to the three time travelers, but none of the machine men's thought waves reached them.

"Your time bubble seems to be impervious to the reception of thought waves," said the professor.

"You two would know that better than I," the Qwux replied.

In sporadic leaps, Zlestrm bridged lengthy periods of time, coming up to the present once more.

"We shall now try the future, although I know pretty well what to expect. At present, you have witnessed nothing very sensational, just a review of the past in this space ship. In reality, we have not been moving through the past, but by

means of the time bubble we have brought the past to us. Past scenes of this space ship have been mirrored in the time bubble."

Zlestrm now worked at a different set of controls on the large container. He was a bit careful, cautious of his movements. Again there came the weird cacophony of mingled sounds and the flickering blots of movement.

Professor Jameson once more saw his metal companions moving about the space ship. Again he saw himself, and he saw Zlestrm as well. They were all behaving strangely. Indistinct and hazy, they moved in several directions at once. There seemed to be more than one of each Zorome. The professor saw several counterparts of himself moving about the space ship. Most surprising of all, the conglomeration of double and triple personalities moved through one another easily, without apparent notice or realization.

Baffled, Zlestrm moved the scene far ahead. The results were the same. Sometimes the space ship appeared empty except for dim-moving, shadowy forms. Again, the conglomeration of machine men, like countless superimposed photographs, were visible, sometimes clearly, sometimes dying away. Several times Professor Jameson saw what appeared to be no space ship at all, only the twinkling stars of empty space. Once, a planet loomed into sight through a near-by port, then dissolved from sight.

Zlestrm was just as puzzled as his two metal companions. He seemed unable to understand it, working desperately with his controls to bring some order out of the meaningless chaos depicted by the time bubble. He sped back towards their present existence and overlapped into the near past. He stopped the flight of time.

The scene before them stood out in amazing clarity. It showed Zlestrm and several of the machine men preparing for

the test. They saw the machine men staring at them with unseeing eyes, eyes that saw only the opaque globe resting on the floor of the space ship. Again Zlestrm jumped into the future, obtaining the same results as before.

Professor Jameson had been doing a bit of thinking. "I believe I can enlighten you, Zlestrm," he said.

"How do you explain all this?" asked the Qwux, waving a hand at the confusion of shifting scenes which merged and contradicted each other so chaotically.

"When dealing with the past, you treat with something already established, events which have taken place. In no way can that which has happened be changed. That is the fundamental reason why you could construct no time machine which would carry you either backward or forward in time, physically. Just imagine, Zlestrm, if this were so, you might go back into time, meet and kill yourself, then commit suicide, and your time-machine which took you back into time would never have been invented. It makes just that much sense, a ludicrous impossibility."

Both Zlestrm and 41C-98 pondered the professor's sound logic while all about them moved the same endless conglomeration of conflicting events.

"**N**OW, let us consider the future," said the professor. "None of it has taken place, and it is yet to be made. This mixture of future events portrayed in the time-bubble represents possibilities. Events occur as a matter of simultaneous coincidences linked together like a chain. Suppose, Zlestrm, that you saw the future depicted as accurately as you have reviewed the past. You might see yourself performing some task, for instance. How easy it would be to divert yourself from this and contradict the future in some manner. It would require but a slight deviation from routine to throw into

chaos any given train of coincidental events, so closely do they depend on one another. The future is too shifting and unstable to be depicted accurately, and it is surprising that your machine had done so well with the future."

"I believe you are right, 21MM392."

"It stands to reason," Zlestrm agreed.

"Upon my world, forty million years ago," said the professor, "there were people who forecasted the future. They possessed peculiar qualities of mind not given to the vast majority. This gave them an insight into the future, and they were known under such names as soothsayers, necromancers, diviners, prophets, mediums, clairvoyants and fortune tellers. It is quite possible that their gifted faculty was not unlike the workings of your time machine. They saw the future as a conglomeration of conflicting possibilities, and they chose from this according to judgment and whim. They were not infallible and were often in error. Their percentage of accuracy, of course, depended upon the extent of their power as well as their intelligence and judgment."

"Suppose we return to the present," suggested Zlestrm. "Our test has been completed."

"What would happen to us if the time bubble should break while we were in the past or future?" queried 41C-98.

"We would immediately find ourselves in the present with a shattered globe," was Zlestrm's reply.

The Qwux brought them back to the present and then pressed a lever which dissolved the globe about them. Once more they were with their companions, telling of their trip into time.

"What has taken place is nothing, however," the professor promised. "Wait until we reach the earth. I shall trace mankind down through the ages and find what happened to the civilization I left at the time of my death."

Time passed slowly and monotonously

for Zlestrm despite his ability to sleep. He was not a machine man, and an organic body made him aware of the passing of time. Several of his planet's years had passed before the outer planets of Professor Jameson's solar system blurred into sight. Since the time traveler had been tested, several improvements and facilities had been added. At the professor's insistence, the composition, which made up the time bubble, was prepared to withstand the rigors of intense heat and the opposite extreme of cold. An installation of mechanism below the vapor chamber gave the time bubble mobility, either in air or in space.

The space ship of Zor flashed past Neptune. Far off to one side lay Saturn which no longer possessed its rings. The other planets, with the exception of Mars and the earth, lay on the opposite side of the dying sun. Earth glowed dully as a very thin crescent.

A strange sensation seized the professor as he looked upon his home world, yet there was nothing homelike about the dying world, which might have appealed directly to him. The continents as he had known them were gone. Even the poles of the planet were not the identical spots which had characterized his period of life forty million years before. A great change had been wrought.

One half of the dying world forever faced the blood red ball of a cooling sun, the face of the planet heated to a tremendous degree. The remaining half of the sphere was cold, frozen, desolate. The atmosphere, unequally divided over the great globe, was nearly gone. On the daylight half, stars were visible. The Zoromes had discovered on their last trip to the earth that a thousand mile band of territory encircling the earth represented the extreme limits on which they might emerge from their space ship.

The space ship was brought to rest in this twilight zone where the cooling sun,

whose gigantic ball now lay nearer the earth, hung upon the horizon. Attracted by the mighty luminary, the earth and its sister planets had circled ever nearer down through the eons of time. Somewhere in the incalculable future, Professor Jameson knew that the earth would return to the flaming folds from which it had been hurled at birth.

"Our time traveler is now also a miniature space ship or globe traveler," said the professor. "We can penetrate to the uttermost depths of earthly time and make observations on any part of the planet we wish. Our repeller rays can project us as far into space as we wish, and our detector will keep us informed of the exact proximity of the earth's surface at all times. The machine has been enlarged so that it will now accommodate four machine men and Zlestrm. 744U-21 can select two more to fill the party."

To accompany Zlestrm, 744U-21 and Professor Jameson into time's uttermost realms, 6W-438 and 454ZQ2 were given positions on the platform of the time machine. The time traveler was set on a piece of level ground, and in the twilight brilliance of the dying sun, the five anachronistic adventurers took their places.

From the machine issued the dense vapor which enveloped them, presently forming a shining globe about them. The remaining machine men, fifteen in number, stood by the side of the space ship and looked on as their companions became lost in the cloudy haze which grew to the semblance of a shining sphere, the time bubble.

"GIVE it your highest acceleration, Zlestrm," Professor Jameson urged. "We are going back to the beginning of time on the planet earth."

"I would like to look upon the civilization of your time," said Zlestrm. "It would be interesting for you to see your-

self as you were forty million years ago."

"Forty million years is as nothing to what you are going to see," was the professor's reply. "We are going backward billions of years. We shall eventually move up to my time; then you shall see the race of creatures from which I came."

The machine men watched Zlestrm as he rapidly stepped up the flight across time's chasm. There were no flickering shadows, no sounds, this time. The color of the globe was a grayish hue, so rapid and inconceivable was the transition. The machine men were unaware of how much time had passed since they had blown the time bubble about them, but Zlestrm's recourse to food and drink brought this fact to the professor's attention. He called to Zlestrm who was busy examining the air rejuvenator.

"Stop and see where we are."

Zlestrm did as he was directed, and the gray inner surface of the time bubble disappeared. The time travelers found themselves looking upon a strange scene. Smoky vapor curled all about them, and, through it, could be dimly seen an intensely hot globe in the sky.

"We're nearly there," said the professor. "Go back still farther."

Once more Zlestrm started them on their backward flight through earthly time. Again the professor told him to stop. The gray of the time bubble grew to a bright gold which slowly resolved itself into an intensely white brilliance. Zlestrm screamed and covered his eyes from the glaring light. The machine men's eye shutters clicked rapidly shut. Zlestrm cowered on the floor, his head shielded. Professor Jameson groped for the controls, not daring to look.

"Do not look!" he cried. "It means blindness for you, Zlestrm—new optical plates for us!"

"Where are we?" asked 6W-438.

"Somewhere near the center of the sun," the professor replied, finding the

object his groping tentacles searched for.

His tentacles curled about the long lever and pulled it. Blackness soon replaced the intense brilliance. The machine men, who had been left beside the space ship, looked on wonderingly as the globe shot into the sky, grew small and disappeared in space.

From far out in space, the machine men and Zlestrm looked back at the bloated star from which they had just emerged and left far behind.

"Where is the earth and the other planets?" asked Zlestrm.

"In there," said the professor, pointing back at the dazzling star. "They have not been born yet."

"When will it take place?"

"Just as soon as that other star reaches this vicinity," Professor Jameson replied. "It may easily be a couple hundred of your lifetimes, Zlestrm, so we had better jump ahead this time. To do that, we must return to the sun. Protect your sight."

The machine men who had been left behind looked on in awe as they saw the time bubble return to earth and leave again. This maneuver was repeated several times as the five occupants of the time bubble moved upward towards the momentous birth of a solar system.

"We have not long to wait," said the professor. "The suns are nearing each other. They are behaving strangely."

It was true. As the machine men and Zlestrm watched from their distant point in space, the two stars bulged at the sides facing each other. Though the movement was not visible, the machine men knew that their rotation had been accelerated. Wispy clouds of flaming material flew away from the great stars, forming a nebula about each. A gigantic paroxysm seized both of the cosmic bodies. It seemed that they literally belched forth their flaming insides which swirled and drifted about them in circling rings.

"Let us return," said the professor. "It will be the fourth ring which will probably be the earth."

"Which system?" queried Zlestrm.

"The one with the eleven rings," the professor explained. "You will notice that the other system has twenty rings or more. Several of them merge."

"Are you sure of earth's being the fourth ring?" asked 744U-21. "I thought it would be the third."

"The earth is now the third planet from the sun," stated Professor Jameson, "but, during the era at which we are now looking, a nearer planet than Mercury circled the sun."

THEY entered the vast flaming ring, and the time bubble was rapidly accelerated into the future.

"There will be little to see for many hundred million years," Professor Jameson told them. "The ring, as you already know, eventually resolved itself into a planet and a moon. We shall reach for the first life on the earth, the first life beyond the fossil stages."

Down the pathway of time they moved in long jumps, halting now and then to find what period of earth's lifetime they had reached. Finally, crude forms of life in the way of vegetation and animals became noticeable. When they reached the age of reptiles, Professor Jameson knew that it would not be long before they might expect to view mankind's predecessors and ancestors. Zlestrm and the professor's metal comrades were enthralled by the sight of the great dinosaurs, the bloated sun, the myriads of life and the everlasting fight for food and existence, but the professor was impatient to move onward.

There were animals who often took to the trees and swung skillfully among the branches. They bore a remote resemblance to apes and simians of Professor Jameson's day, yet nowhere could

he remember any scientific reconstructions of his day which resembled them. The time bubble made another leap of several thousand years and the professor found that this curious animal had divided into two distinct groups. One species resembled a low form of ape, while the other was apparently of greater intelligence.

Here, thought the professor, might be the answer to evolution's riddle. Those in the time bubble watched the progression and gradual evolution of this type up through the ages. No longer was there any doubt. This was man's early ancestor. The creature upon whom the professor looked appeared as a man with apish features and characteristics.

The time bubble moved onward ever nearer the era contemporary with Professor Jameson's life on earth. The professor estimated the period to be roughly two hundred thousand years before the advent of Christianity. Men had banded together and commenced living in caves. Domesticity had found its birth.

Professor Jameson and his companions were watching a colony of the troglodytes in their community on a cliffside when 454ZQ3 suddenly pointed to a small dot falling slowly out of the sky.

"One of the flying reptiles," observed Professor Jameson. "It is rather surprising to find a few surviving saurians in this advanced era. They really belong to an earlier age."

"That bird has no wings," said 744U-21, pointing to the small dot which grew in size and dropped into a near-by forest.

"We shall investigate."

They left off watching the troglodytes and hurried to where a large metal sphere roamed aimlessly over a dense forest bordering the foot of a steep declivity.

"A space ship!" cried 6W-438.

"From another world," said the professor. "Mars—probably."

"Suddenly, the space ship veered

sharply towards the cliff, dropping lower. Those within the time bubble saw a strange scene. Upon the termination of a narrow ledge stood a cave man, his back against the wall. Down upon him rushed a gigantic cave bear. From the strange space craft there shot forth a blinding ray of white light full upon the fearsome beast which, unable to halt its mad rush, plunged against the rocky wall beside the cave man, dead. The space ship hovered near the cliff, its occupants evidently examining the troglodyne they had just saved.

Zlestrm moved the time bubble to a position which brought their vision within the space craft. It contained two creatures of strange build and overlarge heads, grotesque caricatures of mankind.

"A space expedition from Mars," concluded the professor after a cursory examination of the space ship and its occupants. "Their world, being much smaller than the earth, cooled first."

A brief trip was made across space to Mars to verify the professor's belief. He was right. On the planet Mars they discovered a highly developed civilization, but the entire globe seethed with war and destruction.

"If they keep that up very long, they will be making no more space expeditions," prophesied 744U-21.

Back once more they went to the earth, and once again time was covered in large leaps of several thousand years each, bringing them to what Professor Jameson recognized as the early Biblical era.

"Right here, I wish to gather some geographical data," said the professor as he helped Zlestrm maneuver the time bubble off the earth and into space once more.

Below them, the earth rolled like a gigantic ball. The continents stood out clear and bold.

"For what are you looking?" Zlestrm asked.

"Atlantis," replied the professor. "It was a continent believed to have existed before the dawn of authentic history. It was supposed to have sunk beneath the ocean. Look—there it is! The continent near the center of earth's crescent!"

"Shall we watch it sink?" asked Zlestrm.

"Not this trip," the professor replied. "I wish to cover a long period of time before we return to the space ship, and to accomplish it we cannot stop too long in one period of time."

CHAPTER III

River of Life

THE time bubble was next maneuvered to a position over the Mediterranean. Here, Professor Jameson failed to find a broad expanse of water. It was an immense basin of dry land, partly desert. Where a deep sea was one day to be found, there was now but a vast area of sunken continent. Moving the time bubble, they discovered that a comparatively small section of land separated the great Atlantic from the slowly sinking valley of the Mediterranean.

"If that keeps up," said 744U-21, "it will take but a slight convulsion of nature to send the ocean flooding into the valley."

"Yes—that's what actually did happen," the professor replied. "And there were people living in the bottom of the valley."

"A good many of your species must have been drowned," 6W-438 observed.

"They were," the professor admitted. "The story, however, as handed down to us by legend, lost nothing in the telling. It grew in size until report had it that the entire earth was covered with water. The valley dwellers who managed to

escape must have thought so, I guess."

"Let us view the cataclysm," 744U-21 suggested. "It will be interesting."

By slow degrees, the time bubble was moved along in twenty year strides; it was moved all over the valley in search of Noah's Ark which, if the story was authentic, the professor believed must be in the process of construction. But nowhere could trace of it be found, though they searched among all the villages and spots of human habitation.

"Possibly a fable invented by those who escaped to higher ground," the professor suggested. "Either that or else we have skipped it. Perhaps it is too early to search for it."

But the next step of the time traveler brought them into the midst of murky green waters which rolled high above them.

"We've passed it," said the professor. "Retrace slowly, Zlestrm."

The Qwux did so. The water disappeared, and they found themselves in the throes of a terrible storm of unusual ferocity. Terrific downpours of rain deluged the valley for days. Raging, mountainous seas slammed their tons of frightful weight against the weakening barrier-cliffs near Gibraltar rock so that the spray gathered and formed rivulets into the valley of the Mediterranean. The machine men and Zlestrm watched in fascination as part of the rocky buttresses weakened and fell, allowing the mad waves to wash into the valley.

And still the terrific downpour of rain continued unabated, beneath lowering skies as dark as night. Streams of water poured over the cliffs, washing away the rock. By short jumps of the time bubble, the time travelers saw the invasion of the sea increase to alarming proportions. This continued for several days, and then, with a mighty roar and convulsion of the ocean, the remaining wall broke, sending

a towering tidal wave rushing into the partly submerged valley.

The time bubble moved onward in erratic jerks covering various periods of time. Occasionally, brief stops were made in order that they might see and hear events occurring in world history. The machine men and Zlestrm witnessed the power of the Pharaohs, the rise and fall of the Mayans, the burning of Rome, the Crusades, the Napoleonic wars, the development of the industrial age, the World War and many other sensational pages out of earth's history.

"They are now approaching the power and achievements of the Martians," 6W-438 remarked. "It is a dangerous period."

"The Martians!" Professor Jameson exclaimed. "We have seen nothing more of them on earth since the time of the troglodytes. Let us see how they fared."

A rapid trip to the fourth planet disclosed but a few low forms of animals as the only life existing on the planet. All intelligent creatures had disappeared.

"Anything might have happened to the Martians during two hundred thousand years," said the professor.

"Shall we go back and see?" queried 454ZQ2.

"Not this trip," urged Zlestrm. "My food supply is becoming low in quantity."

"That's true," the professor agreed.

"Let us move forward. We are now reaching the period of time when my rocket satellite was sent into space. I am quite interested in knowing how my nephew went about his duties in carrying out the instructions I left him. You will soon see how I defied all time and preserved my body for forty million years after my death. It happened in the year 1950. First of all, I must find my home town, the village of Grenville."

into space they flitted to get their bearings. Over the continent of North America the professor guided the time traveler, and then they swooped downward towards the earth. It took the professor but a short time to find his native home.

Out of the graveyard of memories came strange sensations of mind. An intense longing, a homesickness, suddenly struck the professor. Once before, immediately following his resurrection to life by the machine men of Zor, he had felt this way. He took a firm grip on himself, gained self-mastery of mind and then jumped the time bubble ahead several years. A small village lay below them. Professor Jameson moved the time traveler to a position just above a large mansion which stood on a hill overlooking the village.

Like a long gone dream across time's mighty chasm the scene smote the professor's consciousness. It was a June morning. The sun's rays penetrated the leafy foliage to create a checkered shade upon the greensward, throwing the long, early morning shadows of houses and trees in a haphazard, chaotic design. A gentle breeze of summer set the leaves of the trees slightly in motion, and fresh bloomed roses dropped their loosened petals. The little village, nestling in the foothills of the great mountains whose jagged contours towered away into the blue distance, represented a picture of peaceful tranquillity, a simple, country village.

From the mansion issued the figure of a middle aged man who walked slowly down the pathway to the gate and stood looking upon the restful panoramic scene stretched out below him.

"That—that's I!" Professor Jameson exclaimed, rustling his tentacles nervously.

The machine men and the Qwux stared in fascination first at 21MM392 and then

PROFESSOR JAMESON took over all controls of the time bubble. Out

at the flesh and blood creature depicted to them through the time bubble.

"Down there, you look as you did when we picked up your rocket satellite!" 744U-21 exclaimed.

"Turn on the audiophone," Zlestrm suggested.

The professor did so. In the village below, life commenced to stir. The roosters had long since ceased their crowing. A dog barked; voices were heard. The village was rousing itself and throwing off sleep to begin the labors of a new day. Joyous knots of straggling children went their leisurely way to school.

The lone figure at the gateway gazed past the village and away towards the great mountains whose giant fingers lay outstretched against the azure sky like huge monoliths of the gods. Professor Jameson remembered that day particularly well, and he knew what his next actions would be.

Eagerly he watched himself walk back towards the house. His companions also watched closely, sensing something imminent. But the professor did not enter the house. He proceeded in the direction of a high fenced enclosure. Inside rose a tall structure. The high tower bore a strong resemblance to a silo and was tilted at an alarming degree, suggesting the leaning tower of Pisa. The professor entered the strange building.

Across the yawning maw of more than forty million years, his mechanical successor moved the time bubble to a position which enabled them to view the interior of the tower.

"There is my rocket!"

Zlestrm and the machine men stared long at the cylindrical rocket which tapered slightly at its base. Eight cylindrical protuberances affixed to the base provided the radium release for the recoil charge, while stabilizer fins were constructed to guide the rocket safely beyond the atmosphere and into the seas of space. Four

straight guide rails ran the length of the tower.

Professor Jameson reached for a lever of the mechanism guiding the time bubble. The scene disappeared, and the time bubble was once more above the mansion. In short, hesitating jumps, the machine man moved the time traveler along through the following months. Finally, reaching the time he sought, the professor stopped the flight of the time bubble.

It was twilight. From out of a leaden sky, big, white, feathery flakes of snow came floating softly down upon the little village of Grenville, clothing it in a blanket of fleecy down. The dark gray of the overcast sky deepened as dusk settled at an early hour of the evening, and still the countless myriad legions of silent, drifting snowflakes continued their descent, the hitherto dark roof-tops of the little township putting on their white caps. Lights twinkled in the windows, and mothers called children, who, with lagging footsteps, reluctantly abandoned their merry gamboling amid the first snowfall in answer to the supper call.

Sitting majestically on its hill overlooking the village, the grim, austere mansion of the late Professor Jameson presented a lonesome aspect, even though a solitary light shed its glow from one of the windows of the massive house. The machine man knew that his dead body had been laid to rest within its grave yard vault. A slight shifting of the time bubble showed the professor's nephew, Douglas Jameson, reading the documents and instructions of his dead uncle.

THE professor saw ghastly surprise and wonderment cross the young man's face as he read the professor's plans and preparations. Douglas Jameson hurried from the house and entered the outer laboratory of the professor with its rocket tube. Snow had ceased to fall,

leaving the ground covered with a ghostly carpet of pure white to the depth of a foot. Overhead, a few dark clouds scudded across the star-lit sky, veiling at frequent intervals the twinkling points of light, set like fiery gems against a background of jet blackness.

Douglas Jameson emerged from the workshop rather bewildered and made his way back to the house. It was several hours later, around midnight, before the four Zoromes and the Qwux saw the young man emerge once more from the mansion and start out through the snow. Under his arm he carried a small bundle.

"Where is he going?" queried Zlestrm.

"To the cemetery," Professor Jameson replied, "after my dead body."

They followed him in the time bubble. Sure enough, over the cemetery fence he climbed among the snow capped grave-stones, heading for the Jameson vault. The graveyard was silent, deserted. He was unobserved, yet he looked cautiously all about him.

At the vault, he fumbled with several keys before the grated door swung around and gave him entrance. He was gone for only a few minutes. When he emerged, he carried a bulking white bag over his shoulder. No need was there of the professor to tell his companions what the bag contained. They watched Douglas Jameson with his heavy burden as he made his way towards the cemetery fence. Several times he stumbled over hidden footstones and fell in the light snow which covered him from head to foot with feathery flakes.

Reaching the fence, he hesitated before climbing over, looking cautiously up and down the road to be sure there were no late travelers in sight. Sensing his purpose, the professor also looked up and down the road from his position in the time bubble, and farther down the road he saw what a thin growth of evergreens had concealed from the hasty observation

of his nephew who was in unseen danger.

A man came staggering along the snow covered road, leaving a winding path of footsteps. Douglas Jameson stood in peril of discovery. Rapidly, the machine man brought the time bubble to a position where the lonely pedestrian's face was visible to him. The professor repressed a mental exclamation of surprise. The man's face was black. It was George Jackson, Grenville's colored handy man, and he was drunk. How well Professor Jameson remembered the superstitious old negro who had often done odd jobs around the Jameson estate.

If the negro's unsteady gait had not apprised the professor that he was drunk, the fact that George took the route home past the cemetery would have brought to his recollection George's weakness for liquor. The negro's legs constantly persisted in becoming crossed, and it was apparent that he had fallen in the snow several times. The lanky black had no thoughts of the cemetery until he was beside it, and then, when the fact impressed itself beneath the wool of his kinky head, he merely shook his head lugubriously and passed on, emboldened by the influence of strong drink.

He possessed courage unexperienced during his sober moments, and so without trepidation he continued his winding trail past the army of silent, ominous grave-stones, interspersed here and there with a grim, forbidding vault, standing like ghostly sentinels over the dead in the pale, uncertain light of the moon which peeped intermittently through the irregular fringe of the drifting cloud mass.

Douglas Jameson, in the act of climbing over the fence with his heavy burden, saw the negro at the same moment the latter discovered him. He hurried to get over the fence and across the road. The negro shook as with palsy, a dark, graven image of fright and horrible immobility, his eyes bulging in violent alarm at the

sight which confronted him. Outlined dimly against the snow, the white figure with its big white bundle swung over one shoulder sobered George Jackson instantly.

He wanted to scream, but his throat was paralyzed, and his legs refused to cooperate with the wild entreaties of his brain. He might as well have been carved of stone for all the sound or motion he was able to elicit from his body. His black, woolly hair stood straight up from his head as Douglas Jameson hastily crossed the road and hurried from sight into a copse of woodland.

Not until the spectre had disappeared from view did the negro once more gain control of his body. A shrill cry of terror issued through the audiophone of the time bubble as George Jackson gave a ludicrous bound which cleared an amazingly large amount of ground as he was off down the road like a shot. Minus hat, and with coat-tails flying in the breeze created by his passage, he was a credit to any cross-country running team, his long thin legs working like pistons to escape the grim apparition which he felt certain was no greater distance than two steps behind him.

The stupefying effects of the alcohol had left him completely the moment he had seen the ghostly phantom scale the cemetery fence. As he ran, his breath came in great, sobbing gasps, and when he stumbled and fell it was to perform a rapid somersault and again continue his breakneck speed. George made his lonely cabin in record time, shoving open the door and slamming it shut behind him.

Professor Jameson, amused at the incident, followed with the time bubble. He had seen the birth of a planetary system, he had looked upon the dawn of civilization, the conquests of Rome and other epochal events, yet none of them impressed him so greatly as this homely

little incident which brought back to him so poignantly recollections of his life on earth with its joys and sorrows in the long ago.

THE machine men and Qwux queried the professor over the strange happenings they had witnessed, and the professor explained to them their relationship with his rocket satellite.

"Secrecy regarding the matter was desired until after my nephew's death," Professor Jameson explained.

They waited patiently as George Jackson emerged from under his bed, fear and curiosity mingled on his face. Cautiously, he approached the door and opened it a slight crack, ready to shut it at a moment's notice. No one was outside. He opened the door a little wider and thrust his head outside. The clouds had drifted away and now a steady, unobstructed flow of moonlight afforded an excellent view of the landscape. The negro's heart pounded against his ribs as the eyes in his mabogany face rolled in terror-stricken gaze towards the vicinity of the cemetery. Something upon the heights of the Jameson estate attracted his attention. It also attracted the attention of those within the time bubble.

A blue, luminous flare arose, and then with a crackling sound barely audible, the gleam of violet-tinted light shot off into the sky. With a scream of fear, the shaking negro endeavored to do two things at once and do them fast; to pull his head inside and close the door. He attempted the feat with such startling alacrity that the muscles of his arms coordinated with his brain a moment sooner than the time required in which to withdraw his head. The result was inevitable. His head caught in the door, leaving him squirming and howling in an effort to extricate himself. He finally succeeded when he reversed the persist-

ence of his hands in their frantic attempt to close the door.

"That was my rocket he saw!" exclaimed Professor Jameson. "We must go back and trace its flight!"

A slight reverse in time was necessary to bring them back to the point where Douglas Jameson had fastened the professor's body in the rocket. They saw him place the corpse against the plush upholstery of the rocket's interior, fasten a strap beneath the chin and strap the wrists and ankles in place. Then, consulting his watch, he pulled the lever at the base of the rocket and immediately left the place to watch the tower from a vantage point in a window of the mansion. Five minutes later, a blue phosphorescent glow tinged with violet appeared suddenly from the top of the tower, and the rocket broke forth at a slow speed, contrary to his expectations.

There came a low, crackling hiss. The rocket arose slowly to a distance of five hundred feet above the tower, where, with a wild burst of speed, it hurtled rapidly upward, disappearing among the stars. In the time bubble, the professor and his friends followed the flight of the funeral rocket, watching it curve into an orbit around the earth at a distance of sixty-five thousand miles.

"And now to discover how my nephew carried out his further orders," said the professor as they returned to earth once more.

Still in the vicinity of Grenville, they jumped ahead to the next day. Great excitement reigned about the Jameson estate on the hill. The leaning tower and its surrounding laboratory was a seething mass of flames, too far beyond the power of the village fire volunteers to save. Their best efforts were employed in preventing the fire from spreading to the mansion and the other buildings.

Satisfied, Professor Jameson moved ahead a few hours and brought the time

bubble to the exact spot where he might learn if his nephew's actions had been discovered. The professor and his weird companions found themselves the invisible bystanders in Grenville's general store. Several of the village residents were lounging there, among them the negro, George Jackson. Eagerly, Professor Jameson listened through the audiophone.

"Reckon some of those darned chemicals, the peffessor used t' fool with, must have exploded," ventured the store keeper.

"Slim Burton was tellin' as how he saw some funny lights in the sky late last night right up over the Jameson grounds."

"Ah h'aint s'prized at nothin' as happened las' night," said the negro, rolling his eyes fearsomely. "Las' night wan't no night fo' good folks t' be out! No suh! Dere was ghosts a prowlin'."

"Ghosts?"

"As Ah live an' breathe—an' I wondah that Ah still does—fo' a ghost chased me all de way home fum de cemet'y!"

The loungers joined in a loud laugh. George Jackson remained serious, his dark face a deep study of superstitious belief.

"When Ah got home an' opened de doah t' see if it follered me, it grabbed hold ma haid an' tried t' pull me outside t' put me in a big bag!"

At this point, the negro exhibited several large bruises about his neck and chin.

Professor Jameson chuckled inwardly to himself, deriving a great deal of humor from this delightful old character whom he had known so intimately during his earthly life. The transposition of the professor's brain to a metal body had not diminished his interest in the events of his past life, and he had never lost his sense of humor, something which most of the Zoromes did not possess.

CHAPTER IV

Across the Years

THEY moved onward for many decades, finding that a great catastrophe had stricken the earth. An immense cloud of cosmic dust had enfolded the earth from out of space in its drifting mass, shutting off the light of the sun. Humanity found refuge in vast, subterranean cities. Another jump of a hundred years, however, found civilization once more living on the surface in rebuilt cities, the earth free of the cosmic veil. The professor was eager to return and see how it had all happened, but Zlestrm's food supply was nearly exhausted and they must move onward faster.

In the twenty-third century, the time travelers found that interplanetary navigation had been conquered.

"They have now reached the stage which the Martians reached two hundred thousand years ago," 744U-21 remarked.

The next hundred years saw colonization of the other planets, inclusive of Mars and Venus. Here and there, Professor Jameson and Zlestrm picked up bits of life contemporary with the period they were visiting. Bandits menaced the colonies of Venus. There was the Durna Rague, a cult persecuted on earth because of practices in condemned sciences. The hideous organization had fled to Mars. The time travelers also heard of a sensational escape of a prisoner from the interplanetary penal colony on the Martian moon of Phobos.

Space expeditions to the moons of Saturn came back with strange, manlike creatures from Dione, their arms ending in swordlike protuberances. They were veritable born swordsmen. And from Ganymede, one of Jupiter's moons, were brought even stranger beings. In no way did they resemble humans. They were

more like large rubber balls with appendages for movement, these appendages folding into their body at will.

Another leap of two centuries across the years found all three worlds, the earth, Venus and Mars equally settled by mankind. No longer were Mars and Venus the wild, unsettled frontiers of interplanetary colonization. They were firmly established along with the earth. There were space pirates who menaced interplanetary commerce. These, the Interplanetary Guard often fought, when they could find them. The little asteroids and many other out of the way hiding places of the solar system effectually sheltered the buccaneers of space.

Daring astronauts were sent out alone in their tiny space fliers to follow the flight of wild, careening meteors and extract from them their strange metals and precious stones from far flung corners of the universe. The courses of dangerous meteors and small planetoids were accurately charted.

Space craft seemed to avoid the professor's rocket. Those there knew of its history and respected it. Others feared it. Radium repulsion rays, designed by the professor to swerve the rocket from the path of meteors always kept it at a respectful distance from space ships.

One of the strangest cases ever brought to the professor's eyes had happened less than six hundred years following his death. A mastery of super-scientific surgery had been performed. A human being killed in a space wreck among the asteroids had been brought back to life. With mangled limbs, a fractured skull and punctured heart, Nez Hulan had been given mechanical arms and legs, an aluminum brain pan, radiophone ears, a rubber heart and had been restored to life, a human robot.

"Half machine man and half human!" marvelled 6W-438.

The case of the human robot was fol-

lowed a while. The operation had stimulated his brain cells to greater activity and in some way his intellect was perverted to evil deeds. The next time the time travelers heard of him he was the master mind of Carconte's moon pirates, one of the most dangerous bands of pirates ever to infest the interplanetary space lanes.

Decades later, the time traveler found the earth an outlawed world, condemned by its sister planets. Ruled by unscrupulous forces banded together from the three worlds, it represented a menace to the social order of the solar system, a peril to the integrity and order of civilization.

Zlestm's food was gone. He urged them to abandon further exploration, return to the space ship of the Zoromes and restock with food for him. Then, they might build another bubble around the time traveler and come back again.

THE professor knew the wisdom of this, and so rapidly they moved onward in long jumps of several hundred thousand years in an effort to discover exactly when mankind's reign had ended upon the earth. Fleeting glimpses were caught of mankind's gradual evolution. There were periods of degeneracy as well as progress, scientific wars being partly responsible for this. World-wide catastrophes, such as insect invasions and ice ages, also smote civilization heavily.

Several million years beyond his own lifetime, Professor Jameson found humanity still clinging tenaciously to the worlds of the solar system. Venus, a newer world than its two contemporaries, now held the center of life.

Then came invaders from the far off stars, as the Zoromes had come, but with less peaceful intent. Mankind was conquered and held in cruel, oppressive bondage. In the next flight of the time traveler, it was discovered that civiliza-

tion had thrown off the chains of the invaders. Not a one of the creatures was left. The entire atmosphere of Venus was gone, however, leaving that planet as cold and dead as earth's moon. Earthmen had destroyed their oppressors, but at a terrible price.

The air envelope of Venus had been rent asunder and exploded, the terrific concussion rocking the nearby planets, throwing Venus off its old orbit and nearly disrupting the entire solar system. Millions of human lives had been snuffed out along with the space invaders. Those who escaped to earth found themselves free.

But earth was chill and cold, the atmosphere rarified. With the loss of Venus' atmosphere had gone the last ideal world of the solar system. Mars had long ago become uninhabitable. The sun, though much nearer its planets than formerly, represented only a cooled, subdued semblance of its past glory, its brilliance dulled.

At a later period of a few hundred thousand years, Professor Jameson found marked changes in humanity. Man had reached an advanced stage of evolution, where one of his ancestors of five million years ago would have disowned him as an incredible monstrosity. His legs were jointed to move in either of two given directions. Four arms terminated in eight digits. The body was comparatively small. This, the professor learned, was due to the disappearance of the digestive tract. Science of that era so far flung from the professor's life on earth, had supplanted the comparatively short existence of the gastric organs with a more practical means of sustenance.

Man's radioactive blood was kept charged with energy from huge broadcasting units located over the earth and on the space ships in which they traveled. Oxygen was superfluous, too. A lifetime of ten thousand years was common.

Man's head had become devoid of both mouth and nostrils. Like the appendix of man, the unused mouth had finally disappeared. Food no longer was a necessity, and articulate speech had long since yielded to mental telepathy, like that of the Zoromes.

Instead of hair, there arose from the head fully two dozen antennae, serving a double purpose of picking up thought waves and the reception of the broadcasted energy for their bodies. Two black, lidless eyes peered intently from the face. Humanity had done away with sleep. The energy broadcasters kept the body recharged constantly.

Professor Jameson found that plans were being made for an exodus from the dying world. An expedition to the solar system of Sirius had discovered an ideal world. The next time Professor Jameson brought the time bubble to a stop, all life had disappeared from the earth. It was silent and desolate, left only with vague, haunting memories.

"They left for a world of Sirius," said the professor.

"That was over thirty-five million years ago," 744U-21 observed.

"It is a wonder that with all the interplanetary strife, my rocket satellite was not destroyed."

"Yes—it was rather a miracle," 6W-438 agreed, "but I am inclined to believe that your automatic radium repulsion rays for protection from meteors served more than its original purpose."

ONCE more the professor sought and found his rocket satellite on its eternal pilgrimage about the deserted world, from which it had been sent upon its endless career. Like a cosmic coffin, it pursued its lonesome way in the silence of the illimitable, unending space which enshrouded it.

"And thirty-five million years later we

came and took you from your rocket," said 744U-21.

"I am hungry," was Zlestrm's simple statement.

With an empty stomach, the Qwux lacked any kind of an appetite for scientific theorizing.

"We must return to the space ship at once," said the professor.

"How can we find it unless we return to our own time?" asked Zlestrm. "There's no telling on what section of the earth we are."

"That is so," said the professor. "Raise the time bubble and prepare it for movement while I accelerate us to our own time."

Zlestrm moved to the controls, while, under the professor's manipulation the bubble grew hazy as they raced swiftly through the millions of years. There came a rapid bumping and jolting of the time bubble which nearly staggered the machine men off the narrow platform.

"What was that?"

"We're not rising!" Zlestrm cried in desperation. "I cannot move away from here!"

Professor Jameson sprang to the aid of the Qwux, stopping the mad flight through time. Together, machine man and Qwux worked the time traveler in all directions.

"We're caught!"

"Something is holding us down!"

Beyond the time bubble, they looked out upon a peaceful, quiet scene. A cooled sun moved agonizingly slowly towards the distant horizon. A few stars shone from a twilight sky.

"Where are we?" asked 744U-21. "I mean—in what time?"

"About twenty-eight million years beyond my own life," the professor replied, "or twelve million years short of the present."

"Move onward and we shall see what is holding us down," 744U-21 advised.

Before Professor Jameson could touch the time accelerator the time bubble rolled to one side violently. A rasping crash roared above them. The sun disappeared, blotted out by intense darkness, and the twilight sky with its scattered stars changed instantly as the stars seemingly leaped to new positions and were joined by vast legions of their twinkling companions in the velvety blackness.

"The time bubble has burst!" flashed 6W-438, quick as thought.

Machine men leaped nimbly aside to avoid a rain of shale, which slid from an overhanging rock formation. Professor Jameson picked up the bewildered Qwux and raced with his fellow Zoromes from danger. Behind them, the avalanche, which the trapped time bubble had brought down upon itself by the efforts of its operators to extricate it, buried the wreckage. The machine men became aware of a marked difference in the temperature.

"We are on the night side of the earth!" the professor exclaimed. "This is the hemisphere which never faces the sun!"

Zlestrm shook in paroxysms of chill. He was fully protected from the rarified atmosphere by his air mask but at the mercy of the biting cold. There was nothing the machine men could do. The Qwux became frantic. He fell to the ground, nearly paralyzed, then staggered to regain his feet. 454ZQ2 assisted him. Zlestrm became delirious.

"We're lost in time!" he cried, tearing crazily at his air mask. "Twelve million years in the past!"

He hung suddenly limp in 454ZQ2's tentacles. Several violent shivers passed through his body. He relaxed and became quite still.

"Dead!" spoke 744U-21. "It was more than flesh and blood could endure!"

"AND more than we can hope to endure for long," warned 6W-438. "Our brains in their metal cases will stand a certain amount of cold and then——"

The pause was all too significant. The machine men knew what to expect.

Fiery clusters of stars shone down upon them through the thin, dying air. Icy hills and rough, barren land stretched away to meet the horizon, visible only where the star-sprinkled sky met black shadows. They had left the space ship in earth's twilight zone. Where this was they did not know. They only knew that they were lost in the frigid wastes of the dark, frozen hemisphere, alone with death. They had explored the mysteries of time. Now, time mocked them with its precious quantity to be doled out so sparingly ere their brains, like the stiff, inert body of Zlestrm, yielded to the intense cold.

"Let us walk," Professor Jameson suggested, "as far as we can."

Together, the four Zoromes trudged over the frozen world in the direction of a fiery red star hanging low in the Stygian sky. Onward they walked, strange ideas forcing themselves in their all important, yet vulnerable, brains. For the first time in his career as a machine man, Professor Jameson felt an inclination to sleep. It was strange. The stars appeared to be dancing and racing about one another. He was still walking, yet he seemed unconscious of it, as if he were standing still or floating. Yes—that was it. He was floating.

Darkness swept over the land, and the stars disappeared. Were there such things as clouds in this thin air? The professor doubted it. Then suddenly he found himself alone. He was back in Grenville, walking a familiar road. A sudden jerk brought back the bright, glittering stars once more.

"Take command of yourself, 21MM-392!" was 6W-438's desperate warning.

Professor Jameson saw his metal companions walking onward at a faltering gait and felt the supporting tentacle of 6W-438 about his cubed body.

"This must be the end," he philosophized. "Right where I started—back on the planet earth!"

He fought desperately to retain his senses. It was no use. Again he saw the stars obscured as if by a dark cloud. This time, the cloud swept downward, the stars flickering into view again as it swooped past, nearly engulfing them.

"The space ship!" cried 744U-21. "We are saved!"

That was all the professor knew. Once more his consciousness left him. When he regained his senses, he found himself in the space ship.

"We reached you just in time," related 56F-450. "During your travels around the earth in the time bubble, we thought it well to follow and watch you. Your bubble went through some strange antics, but we never lost track of it. From out in space we saw your sudden catastrophe when the gleaming time bubble suddenly disappeared. We came and found you as quickly as possible."

"Poor Zlestrm. He met a quick death."

"And the time traveler is a buried mass of wreckage," added 744U-21.

"I am glad that time traveling is a physical impossibility," 6W-438 observed. "I'd have hated to have found myself marooned twelve million years in the past."

THE END

Ice from Seawater

THE surface water of the ocean in tropical latitudes is very warm; the lower layer of water many fathoms down, approaches zero centigrade, the freezing point of fresh water. By using these two strata of the ocean, different temperatures are available and the conditions for lowering the temperature of water are present. It is the eminent engineer, Georges Claude of Paris, who is about to experiment in the

production of ice by this system. He has already tried to use the temperature difference to drive motors, but it seems doubtful if this will ever be done. One feature which has been cited is that the tropics give the highest differences of temperature in the sea levels, so that if ice is produced it will be made to the best advantage just where it is needed, in the tropics.



The Strength of the Weak

By MILES J. BREUER, Ph.D.

Dr. Breuer, an eminent diagnostician and among our favorite authors, gives us one of his science-fiction stories—fiction because of the narration, but with true science in it. He tells us about the little understood synapse and gives besides a very exciting drama of life and passion.

Illustrated by MOREY

AT the girl's first shriek, Professor Worcester rushed into the main laboratory, out of the door which led from his little cubby-hole of an office.

He was a short little sliver of a man, with a small bald head and large spectacles.

"Why, Marko!" he exclaimed, and his breath seemed to leave him at what he saw. "Why! You?"

Then he suddenly straightened up, and became dignified even in his tininess.

"Take your hands off my daughter! At once!"

Marko Petrescu laughed. It was absurd. He could continue to hold the beautiful and struggling Helen Louise by one hand, and brush away the Professor with the other, without any trouble. He was huge and powerful, even beside an average, well-built man.

At the laugh, Professor Worcester reached in his pocket, drew out and opened a penknife, with a thin blade, three inches long. With this he rushed at the powerful man who was crushing his struggling daughter in two big arms. Petrescu saw the blade. Swiftly he tightened the grasp of one arm on the girl's body till she screamed, and freed the other. With the free hand he clouted the onrushing Professor on the side of the head. The poor little man of science sank to the floor with a weak groan, his spectacles sliding several feet along the smooth tiling.

Petrescu lifted the girl off the floor, bundled her under his arm, with one hand across her mouth, and hastened out of the place. He hurried across the corridor toward the back door, near which his car was parked. He grinned and chuckled to himself; all the exultation of the primeval male, drunk with violence and women's beauty, was his. But fortune intervened.

It appeared first in the form of a ton or two of something hard and swift, that landed without warning on Petrescu's chin. A straw hat clattered to the floor, and over it, the young, red-headed fellow, whose tan suit quite failed to conceal his football build, reached toward Helen Louise. As the black-haired, would-be captor began to sag in the knees, the newcomer picked up Helen Louise and stood her up facing him.

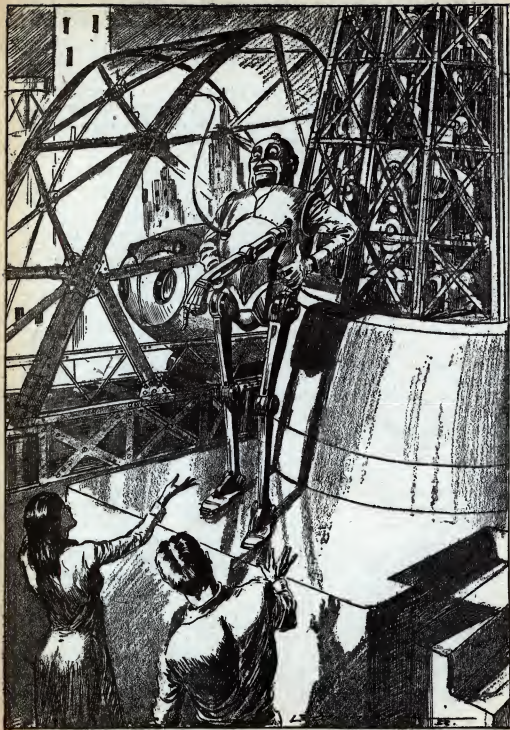
"Jerry!" she cried joyously, and in a moment sprang about his neck.

"Movie stuff?" asked Jerry sarcastically, prodding the big bulk on the floor with his foot. "What you up to, fellow?"

"My father!" Helen Louise suddenly recollected. "He's hurt!"

She drew her rescuer by the hand back into the laboratory. Professor Worcester was not hurt much. He was sitting up on the floor when they came in, with one hand to his head. As they appeared, he closed up his penknife and put it in his pocket. Slowly, with many small contortions, he rose to his feet.

"Tell us about it, Helen Louise," he



Petrescu, with the afternoon sunlight glittering on his polished metal, stood on the platform beside the tower.

said, still staggering a little from his vertigo. "Tell us about it," echoed Jerry.

"Well," Helen began, "a while ago Marko Petrescu slapped his notebook shut, covered up his microscope, and put away his boxes of slides.

"'I'm done,' he said, quietly enough, but his voice was frightening. There was a terrible turmoil under its quietness.

"I kept on working at my microtome, cutting sections of father's neuroma. Something about him frightened me.

"'I've got it!' he said, and the exultation in his voice made the room tremble. 'And with it will come wealth, power, whatever I want.'"

"What is it that he's got, so big?" Jerry inquired.

"He's been working," the Professor replied, "on the nature of the *synapse*: how does the imponderable nervous impulse jump across the empty space that separates two nerves which are known to communicate with each other? The *synapse*, you know, is a mystery to all physiologists. Everyone here in the White Neuropathological Foundation has had a try at it. Understanding it would mean understanding how thought moves matter; for there in the *synapse* is where thought, an immaterial thing, gets hold and controls our material muscles and bones.

"IF Petrescu has really found that, he can do anything, all the way from devising new, more efficient and more pleasant anesthetics, to freeing mind from matter or putting new matter under the control of mind!"

"Boy!" sighed Jerry. "What a feature that would make in the Sunday issue! If I could have only got that from him before I socked him."

Jerry, true to the reporter's instinct, ran out into the hall. But the huge form of Petrescu had disappeared.

"Go on," they both said to Helen Louise.

"Oh, that is all. He wanted me to marry him, and run away with him at once. He made the wildest promises of power and wealth. He's crazy."

"And then he tried to make love to you by force, eh? And your game old dad tried to interfere? Well, good thing I just got a notion I wanted to see your sweet face about this time."

"Wait till he comes back, to-morrow," the Professor said.

Petrescu did not come back to-morrow, nor ever again. His private effects had evidently been previously removed from the laboratory. In a few days they gave him up and put another graduate student in his department of the research laboratory.

"From now on," Professor Worcester said, shaking his small fist, "it will be my job in the world to teach that man a lesson. There are things in the world besides brute strength."

Professor Worcester did not dream how true this would turn out to be some day; though it would be many years. For things went along for several years, and nothing more was ever heard of Petrescu anywhere in the scientific world nor in the world of common men. He simply disappeared. Jerry and Helen Louise had plans to be married, but many things kept interfering with them. Professor Worcester was writing a book on tumors, and for nearly a year Helen Louise was so indispensable to him in the laboratory that she hesitated to mention to him marriage with Jerry, even though the Professor liked Jerry. Then Jerry was sent to Shanghai as special correspondent for his paper, where he remained for four months. During all this time he kept up a steady and frequent correspondence with Helen Louise, and in fact received a letter from her on the day he started back for New York.

When he arrived, he sent his baggage to his own rooms, and took a taxi to the Neuropathological Foundation. He found it in consternation. That very day, Helen Louise Worcester had disappeared!

Her father remembered hearing her go into her bedroom the night before. She did not appear in the morning, and he thought it rather strange, but went on down to the laboratory. He spent an anxious forenoon, and, when by noon there was no sign of her, he informed the police that he was suspicious, for it had been her habit for years to do as she pleased, but to inform her father of her every movement merely because she respected his anxiety about her. Jerry arrived at 4:30 P.M., and nothing had been heard of her.

Nothing was ever heard of her. To pack all of the frantic searching of police, private detectives and newspaper reporters, the desperate offers of reward for information, the numbing, heart-rending ache of waiting, day after day, week after week, the gradual settling down to dumb, hopeless, despairing resignation, all into a sentence, is difficult. But it must be done, for that is not part of our story. The only thing about it, that concerns us, is that both Jerry and Professor Worcester were positive that Marko Petrescu's hand had shown right through it.

AFTER a year of searching, using all the odd sources of information available to a reporter, Jerry had found his anguish keen as ever. Perhaps people forget, thought Jerry, but he didn't believe it. Baffled as he was, he clenched his fists every night and vowed to find her. In order that he might do this, he first of all realized that he must keep his first-class physical condition constantly up to par; and he forced himself to remain in training, like the splendid athlete he had always been. His editor, sympathizing with his sorrow, kept him as busy

as possible, feeling that was the best service he could render.

Professor Worcester was different. His research lost impetus, and he would be seen going about the laboratory and talking to himself. More frequently than anything else, he would be mumbling to himself:

"It is the desire of my life to teach that scoundrel a lesson!"

Very mildly put, one might say. Yet these mild people are sometimes the most to be feared.

Then, suddenly, one day, the Professor vanished. In the morning his housekeeper, hired after Helen Louise's disappearance, waited for him impatiently for breakfast, went up to his room, and found that his bed had not been slept in. Telephone calls to the laboratory disclosed that he had left the previous evening as usual. The case was dumped into the lap of the police by the *Foundation* authorities and by the housekeeper. Only Jerry reserved to himself the right to do some digging on his own account.

"That fellow is behind all of this. No doubt of that. How to get some kind of a start at the problem—" he worried to himself.

He had serious talks with his friend the managing editor, and this shrewd man saw the hopelessness of the quest, and as a result, worked Jerry harder than ever, for Jerry's own good.

Time did not pass rapidly for Jerry, and the few weeks seemed a hundred years before he received the strange letter. He brought it to his managing editor. It was in one of the European type of envelopes with a flowered paper lining, and had an Algerian postage stamp. It contained a small portion of kid leather, recognizable as having been cut from Helen Louise's glove.

"If you want to see Miss Worcester," it said succinctly, "follow the green plane

from the Azores on July 9th, 4 o'clock A.M."

"Suppose it were a trap?" the editor suggested.

"Well, supposing it is! They've got her, and I'm getting at the bottom of it. I've got a week to make the date."

The editor said nothing but wondered if he were losing a valuable reporter.

Jerry duly awaited the coming of 4 o'clock A.M. at the Azores landing field. Precisely on the second, a plane appeared from the east, and turned out to be a bright green when it came near enough. As Jerry rose in his plane, the green plane circled and started back eastward. Jerry was a good navigator, and he started out to keep careful track of the course on which the green plane led him. Subsequently the correctness of his observations was confirmed. The green plane led him to Sarah Ann Island, the island which was on the charts of a century ago, and which no one has been able to find. No matter how fast Jerry flew, the green plane kept ahead of him, so that he could barely keep it in sight. When they "hove to" over the island, the plane dove down, and by the time Jerry arrived, no plane was to be seen, though at the southern end, near a clump of buildings, there was an excellent landing-field.

JERRY was cautious. He did not feel like plunging down abruptly to a landing. He slowed down and circled about the island. It contained only about a dozen square miles, most of which was dense jungle. Above the middle of this, his engine went dead. No effort could start it again.

"You're wrong," Jerry muttered. By proper maneuvering, he could readily land on the landing-field. "I'll be damned if I do, and you can't make me." Jerry was convinced that outside interference had stopped his magneto, with the idea of forcing him down.

He selected a particularly woolly portion of the jungle, and gradually settled down on it. With a great crashing of small limbs, the plane eventually caught. He jumped, after convincing himself that the damage done to the plane was largely superficial, and with patience, could be repaired.

As he clambered ponderously down the tall tree, with canteen and pistol and emergency-ration bag, he heard a crashing through the brush below, and in a moment a ring of unkempt-looking human beings had gathered clamorously around the base of the tree. They were tattered, grimy, bearded and emaciated; and they seemed enraged at him. He caught fragments of English words.

Jerry desisted from his downward progress. Their upraised claws and shaken fists did not spell cordial welcome. No one of them looked very formidable; they looked weak and ill-fed. But there were too many for safety. Jerry clung, and pondered what to do next.

"Who are you?" Jerry shouted. "What do you want with me?"

The ragged mob suddenly broke into a new uproar of terrific clamor. Sticks and chunks of dirt flew around Jerry's ears. But he could make nothing out of their answers.

Suddenly a cry rang out! A woman's cry, half scream of alarm, half shout of delight.

"Jerry!" cried a little brown figure running out of the brush. It was Helen Louise in khaki and much tanned. "Let him alone! He's my friend."

The mob stood a moment in surprise. In another, Jerry had leaped to the ground; and as Jerry and Helen Louise stood there locked tightly in each other's arms for minute after minute, the ragged people slunk away, one by one.

When they had held each other off at arm's length and again hugged tightly and kissed alternately, and asked repeatedly

how are you, and are you well, finally they settled down to hear each other's stories.

"They thought you were Petrescu," Helen Louise said. "They will not bother you any more."

In fact, just then two of them came running up, offering Jerry a number of bananas with some incoherent words he did not understand.

"Petrescu is a demon," she continued. "He had me shut up in his house a while—oh, no; he treated me quite kindly. But I got away."

"Here is what he is doing. You remember, he discovered the secret of the *synapse*, the threshold where the intangible thought impulse is transformed into the tangible current in the material nerve-fiber. For following up his discovery, he had to come here; it involved investigation that could not be carried out in a civilized country. He tortured hundreds of people before he learned how to get a thought out as an electric current on a wire; and probably *vice versa*, to make thoughts by means of electric currents in wires. He showed me human brains out on the laboratory table with wires running from them, moving needles and lighting bulbs.

"He has a luxurious residence and a wonderful laboratory, and a whole town of machinery to wait on him. And all of the machines have human brains in them, to keep them running."

HELEN LOUISE wept softly for a moment. Jerry held her tightly and waited patiently for her to go on.

"My father," she moaned softly. Then she braced up and went on. "He had my father laid out on the laboratory table, and promised him his liberty if—if he, Petrescu, could—could have me—. If not, he would put father's brain in a machine.

"Now my father's brain is in a big

tower full of machinery that stands at one end of the town and it switches rails and lifts bridges and opens gates.

"His body is gone. I don't know what he does with the bodies. I don't know if father is dead or not. I don't know if my father is the tower, or is a body somewhere without a brain—."

"And Petrescu gloated over my humiliation because my father is in charge of all the machinery that serves his wants. Just a sort of butler or janitor on a large scale, Petrescu said. Those brains are his slaves. They cannot work their own will; they must serve his. 'Your father had a good brain,' Petrescu said to me; 'he could have done better things. But he opposed me.'"

"But," Jerry said, his breath shocked out of him by the horrors he had heard from the lips of this beautiful girl, "such a sacrifice! I could not ever expect you to sacrifice your father that way, just to remain loyal to me."

She clung to him.

"Jerry, you don't understand yet. Petrescu is not a human being. He has made a machine of himself. Only his brain is flesh. The rest is machinery."

"And he wants you!" Jerry clenched his fists. "A monster of iron! What—why—. But how did you get away? And who are these people?"

"They are people he has brought here and couldn't use, or doesn't need yet. They know he can come and get them whenever he wants them; each one expects him to come for them sometime. He does want them, one by one.

"He had me in his house, and it is a beautiful place. He tried to be good to me, but I hated and feared him. He is just an ugly bunch of machinery; he hurt and bruised me no matter how gently he tried to touch me.

"One day when he was gone, I wandered all over the house. There were several machines about with human brains

in them. I could expect no help from them; they were all under the absolute control of Petrescu and carried out his wishes only. I peeped into the laboratory. A body lay on the table. I became frightened and fled anywhere my feet would carry me. I waited by a door till a machine went through, and followed, and waited by a gate till night. I waited by the bridge till it went down for some machines coming in from the jungle, and I got through in the dark. I have lived with the people here. But my every moment is filled with terror, because I know he will come and get me."

Jerry held her quietly in his arms for long minutes, or they may have been hours.

"There are enough people here to help me repair that plane and get her away," kept going through his brain. "Then I could bring help and rescue them."

She went off with the women to sleep in caves. He went with men, but hardly saw them. His head was full of plans. Late into the night he lay awake figuring the details of repairing the plane.

Toward morning, some women came shrieking into the men's area. The monster had been among them. He had crashed through the jungle, breaking down all obstacles with his iron body. His brilliant light had flashed among them, and rested upon the beautiful one. He had seized her and crashed back into the jungle with her.

JERRY was frantic. He paced about, but realized the folly of pursuit. All he could do would be to get lost in the jungle at night. Eventually he sat down and planned. He had all his directions. He knew where the group of buildings lay, on a delta-shaped island between the two mouths of a river. He started at sunrise, filling up with water, and eating bananas as he walked.

He reached the river, and saw its two

bridges, one across each branch. He saw the big, rambling house of concrete, with many additions and accretions, irregular and jumbled looking. He saw the many accessory buildings, all of concrete, shops, chimneys, sheds, huge doors, all arranged on three or four streets. Huge bars shut off access to the raised bridges. At the point of the delta, between the two bridges which diverged like a "Y", stood the tower full of machinery. In that tower, controlling it was Professor Worcester's brain, at the beck and call of Petrescu's every whim. Poor old Professor Worcester! The tower had a sort of wizened, melancholy look against the huge buildings behind it.

Getting across the river was a small matter for Jerry. Keeping out of sight, he fashioned a small raft to float his clothes, pistol, canteen, and food, and swam over. Scattered rocks afforded places of concealment for dressing and observation.

The big concrete residence of Petrescu looked like a medieval castle. It was surrounded by walls, within which were beautiful gardens of flowers, ornamental trees, and shrubbery. There were a dozen other concrete buildings of various sizes, but all square and unadorned, and arranged along three or four streets. Nowhere were there any people, but vehicles and various kinds of machines on wheels went back and forth. There was a bright shiny one of delicate glass and nickel and spinning things; there was a big, lumbering tub-like thing with large geared wheels. There was no one in them. They went out of one building, up the street, and into another, all apparently going about their own purposes. Of course. They had human brains in them!

For a long time Jerry lay hidden. It did not seem safe to venture out. There was no place on the bare streets for concealment; and there seemed no particular objective for him—unless it was the big,

rambling concrete house. Then he saw Petrescu.

He knew at once that it was Petrescu that stalked out of the house; seven feet high, topped by some kind of a big helmet with goggle eyes and screened holes and several antennae—Jerry surmised at once that this metal skull contained accessory brains and intensified special senses. There were two natural arms coming out of the metal barrel-like torso, and two grotesque ones; one snaky, metallic, coiling like a rat's tail, with a fine, little spidery hand at the end of it; the other a skeleton-like thing of steel rods with complicated gears at the joints, with a big, complex, jointed hand at the end. The legs were more like this last arm, powerful steel rods and gears.

This monster, which Jerry felt instinctively was the same Petrescu he had known on the Neuropathological laboratory, stopped for a moment outside the door and looked about suspiciously. Jerry sank down behind his rock.

At the next look, Jerry saw him striding down the street. He walked up to the tower and spoke to it in a harsh voice. Machinery started up in a near by building in a few moments. In another building, doors opened wide. In a third, a row of bright, blue mercury-vapor lights sprang up. The little village seemed suddenly to become active, as a result of Petrescu's harsh command to the control tower, which housed Professor Worcester's brain. How it must have humiliated the Professor, Jerry thought, to have absolute control over a thousand things a day, to keep the village going, and yet to be compelled to be a slave to Petrescu's every whim, even to keeping his own daughter a prisoner!

PETRESCU strode back and entered the building in which the Cooper-Hewitt lights glowed. Jerry gave him a half hour's time, and then slipped around

behind the building and peeped in through the lower corner of a window. Within he saw the monster working at a table; in front of him were stacks of papers, glowing tubes, glasses and metal things, too many and too complicated to understand. His two natural hands were busy with small mechanical devices.

Jerry turned and ran. With the aid of a tree, he was over the wall in a moment. He ran through the gardens without giving their exotic beauty a glance. He found the door yielding to his pressure, and plunged in. He found himself in a luxurious corridor, with beautiful rooms opening off it. A queer little machine came scurrying down toward him. He was about to ignore it when it suddenly occurred to him that these things had brains. He caught one of the baby-carriage wheels and looked the vehicle over. It had a flat top with an everted edge like a tray, and six flexible arms. Underneath there were some complicated things. Jerry spoke to it:

"Can you talk?"

There was no reply.

"Will you try to report me or raise an alarm?"

No sign from the machine. But down the hall there came a harsh voice:

"I'll report you, after I lay you out."

It was a tall apparatus, erect and somewhat human, and carried a duster.

Jerry had his pistol out and in a flash had it covered.

"Stop!" he shouted.

It stopped. Obviously, it understood pistols. Obviously it feared them.

"Who are you?" the machine demanded roughly. "What do you want in here? Have you not been given to understand that no one is allowed here but the Master?"

"The girl is here!" Jerry answered and asked at the same time.

"Yes. The girl is the Master's!"

Jerry ground his teeth. The machine started forward.

"Stop!" roared Jerry.

"You have a human brain," Jerry began. "Do you remember when you were human, what love was like? This girl is mine. She and I love each other. The Master has no right to her, and she loathes him."

A harsh, cackling laugh came from the machine.

"I remember once having those silly sentiments. They are quite useless in real life. Most impractical. You ought to have the Master put your brain into a machine."

"Is that what he wants to do with her?" Jerry gasped.

"No," the machine grated. "He is keeping her human—for himself."

"But—" Jerry was puzzled. "That can't be. She is mine. Remember, you yourself once—"

"No use," the machine said more gently. "Even if I were sorry for you, I couldn't disobey the Master. He made all machines to serve his will. We follow only *his* wish. We are made that way."

"Well, I'm sorry," Jerry said, and shot the machine in the head. The roar of the shot, the loud clink of the bullet into the metal, the whirring of things inside, the toppling crash of the thing on the floor, made an exciting succession of sounds.

When it quieted down, Jerry heard faint shrieks coming from somewhere far within the house. He hurried on through mazes of halls and rooms, calling loudly to Helen Louise. Presently the shrieks stopped.

"Where are you?" Jerry shouted.

She came down the hall toward him, and they flew to each other's arms.

"What are they doing to you?" Jerry asked, stroking her hair and looking down at her.

"I'm all right," she answered pluckily.

"I wondered what the shooting and banging was about."

"I had to shoot the butler back there."

"That was poor old Jervis' brain. He was once a lawyer, though not a very good one." Helen Louise seemed to be sorry at the demise of the machine and its human brain.

"Let's get out of here," Jerry suggested.

Helen Louise looked doubtful. But she came along as he hurried her down corridors towards the outer door.

"Are there others in the house who might stop us?" Jerry asked.

"Oh yes. Or worse, they can let *him* know."

"Then hurry."

They found the door locked.

Jerry kicked out a window, and both landed on the lawn, breathless.

"Looks bad," Jerry muttered. "They must be onto us, if they locked the door."

He took her hand and they ran swiftly across the lawn toward the nearest shrubbery.

They were too late. Petrescu came striding noisily into the gate from the street. He stopped at the locked door, and saw the broken window. By this time, Jerry and Helen Louise had hidden behind thick leaves. Petrescu stood still a while, and looked around.

They could hear him cackle harshly, and his muttered words came to them:

"Well, he's saved me the trouble of going out and getting him. I need his brain; it ought to be good."

Jerry aimed carefully at his head, and shot. Plainly they could see the splatter of the dull lead on the shiny helmet. The second shot splattered over the shiny barrel of a body right over the heart area. But Petrescu never even minded the impact of the bullets. He started promptly toward the source of the shooting, with another harsh, inarticulate cackle.

He found them unerringly, and seized Jerry with the snaky arm.

"Run!" shouted Jerry to Helen Louise, and she unthinkingly obeyed, running swiftly away.

Jerry still had his gun in his hand, and it was instinctive for him to apply its muzzle to the twitching coil that was holding him, and pull the trigger. His shot severed it, and the distal portion fell to the ground, emitting small blue sparks. Jerry jumped, brushing past the other arms that grasped at him. His shot had surprised Petrescu sufficiently to get himself a start.

He caught up with Helen Louise, gripped her hand and dragged her along behind him. They tumbled over the wall, staggered among the rocks, gained the river's edge, and lay panting behind the rocks. They suddenly realized that Petrescu had not followed them.

"Of course not," Jerry said. "That is a too common and obvious thing to expect from him—to chase us. He will have more subtle ways of getting at us."

IT was not long before they heard a loud, mechanically amplified voice blaring out:

"You had best show yourselves. You can't get away. If you do not come at once, I shall raze everything flat on this island till I find you. It will then be the last act of my existence to tear you slowly to pieces before each other's eyes!"

"Well!" Jerry observed, almost gleefully. "The old chap's somewhat human after all. He's jealous!"

"He'll do it, though," the girl said, pale with terror. "He is capable of things like that."

"I'll give you ten," the voice blared, and began to count:

"One—two—three—four——."

Helen Louise begged Jerry to give up.

"Think you'll fare any better if we

do?" Jerry asked, drawing her toward the water. "We can swim across, and stand an even chance with him in the jungle."

"Eight—nine——"

"Here we are!"

Helen Louise had lost her nerve; she had sprung up on her feet and shrieked.

"Come and take us."

"Too late!" the voice blared. "I have counted ten. Now, I'll destroy the island and all the brains on it. Then I'll slowly pull an arm off the girl and then off the man. I'll give them a few minutes, and pull a leg first off one and then the other. Then one tongue out after the other. That ought to give me two or three hours of enjoyment."

"Come on Jerry." Helen Louise now took turn drawing him after her. "There he is ahead of us, going the other way, not noticing us at all."

They followed him around the corner of the wall, and down the street. He looked back and laughed as they emerged.

"I gave you a great man's love, and your spurned it," he bellowed back at the girl. "You fooled me once too often."

He strode on toward the control tower.

"Stop!" shrieked Helen Louise again. "We give up."

"I don't want you now. It is too late. This—" sweeping one of his natural arms around—"was all for you. Now, one word to your learned father's brain here, and the whole village will be a wreck. And then my sweet revenge."

Petrescu walked more and more slowly, while the two lovers ran behind him. They had come quite near him, and Helen Louise's head sank and she had no more breath left. Now he was barely across the little street from them, at the foot of the tower.

Petrescu, with the afternoon sunlight glinting on his polished metal, stood on a platform beside the tower. At this close distance, Jerry could see that the tower

was but a mass of wheels and levers and moving rods and revolving parts; a busy machine. And there, just behind it, it seemed only a couple of leaps away, were the bridges, ten seconds between them and the jungle. But the heavy iron beams swung across the bridge entrances, and between them and the water was Petrescu and his steel arm.

"Well, *Professor Worcester*,"—the metallic voice had a sarcastic ring to it—"soon we'll both be done with this existence, which is neither life nor death and has no purpose. But, to you and the others, this existence is pleasanter than nothing. For you, my dear Professor, I've saved a nice little treat. First smash the village, and then watch me amuse myself with your daughter and her lover."

Again his harsh laugh rang out, and he continued:

"I shall count three. When I say *three!* set up your third, seventh and eleventh series of vibrations. They will shake everything down into small pieces, except a circle fifty feet in radius around you, which will include us. Take a last look at your buildings. Get set! One, two, *three!*"

Jerry and Helen Louise paled, and felt an icy pang of horror through them. They clung to each other and looked about aghast. Their eyes darted about the village in apprehension at the catastrophe.

But, nothing happened.

Petrescu was also surprised. A hoarse mumbling came from his helmet.

Then a tremor began in the machinery of the tower. There was a vibration as though an unbalanced wheel were revolving at high speed. There were gradually added, one by one, gratings, squeakings, each second becoming more hideous, as though there were a terrible conflict raging between the various parts of the machinery. The two young people's

teeth were on edge from the sounds.

Their eyes were suddenly attracted to one of the huge iron bars that hung across the street, blocking the bridge. It had twitched. Now it rose swiftly as a shot, high in the air. Down it came, gathering momentum till it hummed through the air.

With terrific momentum the huge weight of iron crashed right down on Petrescu's head!

There lay the beam of steel at the foot of the tower, and the mixture of human body and metal parts that was crushed and crumpled under it, was all that was left of Petrescu, a flat, sticky mass of debris.

For a moment they could not realize that he was really gone.

Then they had to watch the tower. The machinery was much quieter. Through it came vague sounds that seemed like attempts at an articulate voice.

It seemed like words, but they could make out nothing.

Helen Louise burst into tears.

"It is father, trying to speak!"

Jerry could think of nothing to do but to hold her quietly in his arms.

"And I cannot understand him. And it sounds like suffering."

Suddenly a crack appeared down the middle of the tower. Fragments broke and toppled down. In an amazingly few seconds, nothing was left of the tower but a pile of crumpled dust. From the village there came a hum. All the walls seemed to tremble and melt. As they looked at it, the island became a flat surface, upon which were scattered numerous low mounds of dust; except that at one end there was a garden of lovely flowers and variegated trees.

"Poor little Professor," Jerry said, as Helen Louise sobbed on his arm. "He did his little 'job in the world,' didn't he?"

The Four Dimensional Escape

By BOB OLSEN

This is an interesting story by one of our best known authors, treating of the fourth dimension which has played a part in so many narratives. It has a crisis which is met with the fourth dimension and which is successfully solved. It will be found quite exciting in places.

Illustrated by MOREY

EVERYONE who knows how to read must be thoroughly familiar with the details of Norman Kemp's preposterous escape from the execution chamber of San Quentin Prison. The story of the condemned man, who, standing on the trap of the gallows with his hands bound behind his back and with the hangman's noose about his neck, melted into thin air before the eyes of the witnesses, was so sensational, that for several days it occupied the front pages of all newspapers, not only in California but in other parts of the world as well.

To account for this seeming miracle all sorts of suggestions have been advanced. Some of these were ingenious, some were weird, others were utterly ridiculous.

Now for the first time I am prepared to make public the correct and complete explanation of Norman Kemp's mysterious disappearance.

How did this knowledge come into my possession?

The answer to that question is simple. You see, I am Norman Kemp!

TO make my story clear, I must start with the day I became acquainted with Newton Schuler. One Saturday

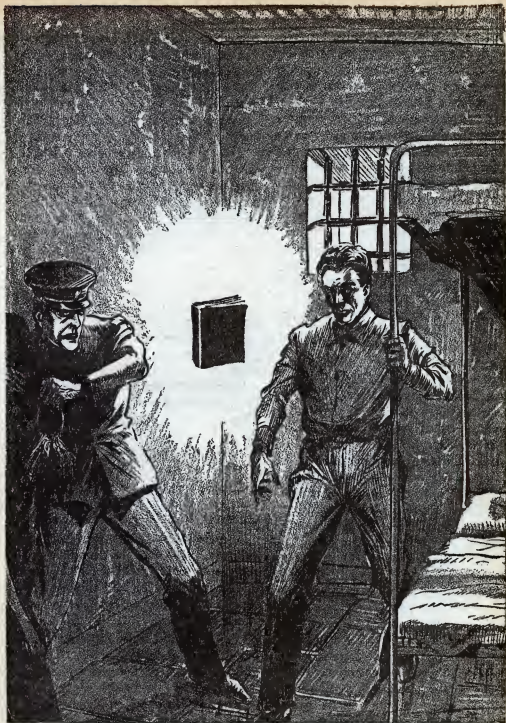
afternoon last fall, I was strolling through the industrial section of Hollywood, just south of Santa Monica Boulevard, when I noticed an unusual building. It was set back at least fifty feet from the sidewalk. The thing that attracted my attention most was an oddly shaped sign. I couldn't quite decipher it from the street, so I wended my way through a no-man's-land of tin cans, broken bottles and miscellaneous junk, until I was close enough to read these words:

"FOUR DIMENSIONS, INC."

Like most people of average intelligence, I had heard about the fourth dimension, but had never devoted any serious thought to the subject. On the other hand, being a graduate mechanical engineer, I naturally had a knowledge of mathematics such as is taught in universities and engineering schools.

Finding this interesting sign in such an incongruous place was too much for my curiosity. Though I had no legitimate reason for doing so, I resolved to find out what was inside the building.

I stepped boldly to the door and tried to enter. It was locked. Though I realized that it was rather an unusual way to gain admittance to what ostensibly was



"My God! The Thing's haunted!" exclaimed the jailor, as he shrank into a corner to get as far away as possible from the object which was behaving so mysteriously.

a business building, I pounded lustily on the door with my fist. After a brief delay, during which I had an uncomfortable feeling that I was being watched through some secret peep-hole, the bolt clicked and the door opened.

If the building and its sign were peculiar, the man who confronted me was even more unusual. He was an old man at least sixty years of age I would say—yet there was something in the glint of his eyes, that betokened a mental and physical alertness suggesting vigorous youth.

Overhanging these eyes, like diminutive awnings, were a pair of astonishingly thick, bushy, grey eyebrows. His snowy hair was exceptionally luxuriant. Down both cheeks, this profusion of grey hair seemed to flop, terminating in a pointed Van Dyke beard.

The raiment he wore was nearly as grotesque as his face. It consisted principally of a laboratory frock which was altogether too large for him. Hanging about his spare form in loose folds, it reminded me of the robes of an ancient Grecian philosopher.

Beneath one of these voluminous folds, his right hand was concealed. From the way in which the cloth stuck out straight at the place where his hand should have been, I concluded that he was surreptitiously covering me with a revolver.

"What do you want?" he barked at me.

"Pardon me," I apologized, "As a matter of fact I don't want anything. I was passing by and happened to notice your sign. Since I am somewhat of a mathematician myself, your sign attracted me. I'm afraid I have been too curious. Please pardon me for intruding."

I was about to beat a hasty retreat when he stopped me in my tracks.

"Halt!" There was no mistaking the tone of peremptory command.

I halted.

"Come back here!"

I went back.

With the utmost calmness and deliberation he looked me over. I noticed that his eye lingered for several minutes in the region of my equator. Finally he spoke again:

"Where did you get that Sigma Psi key?"

This was a big surprise to me. Though the man looked scholarly enough, for some reason or another, I had not expected him to know anything about fraternity emblems. I did not answer until he repeated the question in a voice that made me jump.

"From Brown University," I yelled back at him.

"From Brown, eh?" He looked me straight in the eye as if he was trying to hypnotize me, before he added, "Did you ever hear of Henry Parker Manning?"

"Certainly," I answered. "I ought to know something about Professor Manning. I studied calculus under him at Brown."

"Is he still teaching there?"

"I believe not. As I recall it, he retired the year after I got my M. E. degree. But I believe he still lives near the campus in Providence, Rhode Island."

A remarkable change came over the old man. The look of suspicion and antagonism which had distorted his features melted away like lard on a hot skillet, and he smiled at me in a most friendly manner.

"So you studied under Professor Manning, did you?" he exclaimed. "To my mind he is one of the greatest mathematicians that ever lived. Without the guidance of his works on Hyperspace, I should never have been able to accomplish the purposes to which I have devoted my life. Come right in, by all means; and please pardon my seeming lack of hospitality. You see, I am in

grave danger. I have to be extremely careful."

"Danger?" I echoed. "What danger can there be right here in the heart of Hollywood?"

"Please come in and let me get this door locked. I'll tell you about it later."

AFTER we had introduced ourselves, Newton Schuler led me to a room which looked like a combination office and show-room. It was lined on three sides by cabinets with glass doors. On the shelves reposed hundreds of oddly shaped models made out of some transparent material. The third wall was a thin partition with a medium-sized window, through which I caught a glimpse of what looked like a workshop or laboratory.

Some one was working there. At first, I mistook the overall-clad person to be a boy, but it turned out to be a young and rather unattractive woman.

"This is my laboratory," Schuler announced with a tone of pride. "It is devoted exclusively to four dimensional research. Would you care to see some of my inventions?"

"I'd be delighted."

He kicked back a corner of the rug and lifted out a section of the floor, disclosing a small safe embedded in it. Manipulating the dial, he opened the safe and drew forth a peculiar looking object. It resembled a pair of pliers, except that it had four handles and four jaws. Instead of being made of solid pieces of metal, it seemed to be composed of many small spherical parts welded together. The surface of the instrument was covered with tiny lumps, reminding me of a raspberry.

"This," he declared dramatically, "is the Schuler Four-Dimensional Pliers. With it I can remove the contents of a locked safe without unlocking it or making any opening in the walls."

I almost said, "Oh yeah?" but caught my insolent tongue just in time. Instead, I exclaimed, "How remarkable!"

"Yes," he admitted. "To show you how it works, I'll start on this peanut."

Shaking the nut close to my ear so that I could hear the kernels rattling around inside the shell, he said, "You'll notice that it is a good one."

Then he placed the "monkey food" on the table and, holding the four dimensional pliers in both hands, did something to the handles.

An astounding thing happened. Right in front of my eyes in that brilliantly illuminated room the jaws of the tool slowly melted out of sight. A moment later they came back into view and between them I saw the kernel which apparently had been materialized out of thin air. Dropping the kernel on the desk, Schuler asked me to pick up the peanut and shake it. I did so. It felt considerably lighter than a full-sized peanut. When I shook it close to my ear, I heard not the double rattle of a two-kernelled nut, but a noise which sounded like only one hard object knocking against the shell.

Schuler then repeated the performance, producing a second kernel clutched between the jaws of his mysterious pliers. When, in response to his instructions, I lifted the peanut again, I found it to be still lighter. No matter how much I shook it, I could not make it rattle.

"Open the shell," he directed.

"I split the shell into two parts. It was empty."

"See," Schuler observed. "The kernels I removed before you broke the shell fit perfectly into these two hollows."

"Very clever," I grinned. "But I've seen stage conjurers perform more remarkable tricks than that."

"So you think it is a sleight-of-hand trick, do you?" he said in an injured tone. "Perhaps I can find some way to con-

vince you that with this instrument, it is possible either to remove an object from a closed receptacle, or to introduce an article into it, without making use of any opening."

He opened a drawer and produced a hen's egg.

"Perhaps this will convince you," he remarked. Then, as an after thought, he added, "Let's hope it is not too ripe."

"Have you some article that is small enough to fit inside this egg shell?" he asked.

"How will this do?" I asked, detaching from my watch chain a small pen-knife.

"Fine! and now, in order to convince you that this isn't just a conjuror's trick, I'm going to let you operate the four-dimensional pliers yourself." He placed the tool in my hand and showed me how to use it.

"First I want you to examine this specimen and convince yourself that it is a genuine egg and that there are no cracks or openings in the shell."

I assured him that the egg looked O. K.

"As a matter of fact," he explained, "The egg is wide open in one direction, but since our eyes are not accustomed to looking in that particular direction, it will be necessary for you to grope for the opening."

Following Schuler's instructions, I manipulated the pliers so that they grasped my tiny knife and then carefully brought it in contact with the egg. After feeling around for a while, I was astounded to see the knife and the jaws of the pliers disappear. They seemed to be swallowed up by the shell of the egg, which closed behind them. Then I opened the handles and withdrew the pliers. The knife had disappeared!

"What has become of my knife?" I exclaimed.

Schuler smiled. "What would you say

if I told you that your knife is now inside that egg?" Without waiting for my reply he held the egg in front of an electric light. I could plainly make out the outline of my knife, shown in shadow of course, but unmistakably enveloped by the shell of the egg.

"If that doesn't convince you, break the egg open yourself," Schuler suggested, as he placed a tin cup in front of me.

I cracked the shell on the edge of the receptacle. Out tumbled my knife, completely surrounded by the white and yolk of the egg.

"What do you say now?" the inventor demanded, triumphantly.

"Unless I'm drunk or hypnotized, I have just witnessed an amazing miracle."

"You don't look as if you were intoxicated. I can assure you that you have not been hypnotized. And there is no such thing as a miracle."

"Then how do you account for it?"

"You introduced that knife inside the egg through the fourth dimension."

When I had recovered from my surprise, I remarked, "Naturally I have heard something about the fourth dimension, but I never took the trouble to make a serious study of the subject. Would you mind explaining it to me?"

"With pleasure."

SCHULER then gave me this brief exposition of the fourth dimension.

In ordinary geometry we sometimes conceive of solid objects as being generated by moving points, lines and figures. For instance, if the point of a pencil is moved twelve inches, it generates a line one foot long. This line can now be moved in a direction at right angles to itself for the same distance and it will generate a square. The next step is to move the square one foot at right angles to its surfaces and we can get a three-dimensional object of cube. At any cor-

ner of the cube, we have three edges, meeting at right angles to each other, and these we call the length, width and thickness of the three-dimensional object.

To understand the fourth dimension we must imagine a fourth line meeting three adjacent edges of a cube at the same corner in such a way as to form a right angle with each of the edges. If we move our cube for a distance of one foot in this new direction we generate a four-dimensional solid, or tesseract.

Such a figure can be described in detail, with mathematical precision. It is even possible to construct a tesseract, as I shall show you presently." He produced a cross-shaped piece of cellophane which was creased in such a way that it formed equal squares.

"Of course you know what this is," he remarked.

"It looks like one of those models the kids cut out of paper in kindergarten. When you glue it together it forms a cube."

"Precisely!" and he deftly folded the piece of cellophane until it assumed a cubical shape. "Now take a look at this model."

The object he held up was made of a flexible, transparent material. It looked like four cubes placed one on top of another. From each of the four exposed square faces of one of the inside figures, a cube of the same size and material stuck out, making four more cubes, or a total of eight.

"This," explained the inventor, "bears the same relation to a tesseract that the cross-shaped piece of cellophane bears to a cube. Do you get the point?"

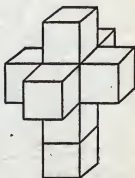
I nodded.

"Very well then. All I have to do is fold this through the fourth dimension just as I folded the two dimensional pieces of cellophane through the third dimension, and I have a tesseract."

In some preposterous manner he actually succeeded in bending that model around itself until the eight cubes were



LEFT: Two-dimensional pattern from which the three dimensional cube was constructed.



RIGHT: Three-dimensional pattern from which the four dimension tesseract was constructed.



TRANSPARENT CUBE



PERSPECTIVE VIEW OF TESSERACT

arranged in a perfectly symmetrical position with respect to each other.

Though I am not an artist, I shall try to construct a diagram showing how that tesseract looked in perspective. And while I am about it, I may as well draw a likeness of the model from which Schuler constructed the tesseract. For purposes of comparison, I shall also include a picture of the piece of cellophane and the transparent, hollow cube as it looked in perspective similar to that in which the tesseract is represented.

TO interpret the diagram of the tesseract it is of course necessary for the observer to use his imagination, just as one has to do in looking at any flat picture drawn in perspective and representing a solid object. For instance, a glass cube, when viewed from directly overhead, looks like a square (the top face of the cube) with another square, somewhat smaller inside it, and with the corners of the two squares connected in straight lines, as is shown in the drawing of the cube. Although the bottom face looks smaller than the top one, because it is further away from the eye, our knowledge of cubes and of perspective tells us that the two squares are the same size. Also the four figures surrounding the central square, which look like trapezoids, are really squares.

Applying a similar interpretation to the diagram of the tesseract, one must bear in mind that the small cube, which looks as if it is inside the larger cube, is exactly the same size as the other one and is not inside it at all, but is separated from it by six additional cubes, represented in the picture by the figures resembling truncated pyramids. In other words, all the solid figures are equal-sized cubes and all the faces are equal squares. It will be noted that at each corner there are four intersecting lines. These lines are all equal in length and

they all meet at right angles to one another. By counting the various elements, one will find that the tesseract is made up of eight cubes, twenty-four square faces, thirty-two lines of edges and sixteen points or corners.

While I was examining the tesseract, Schuler put the four dimensional pliers back in the safe, closed the heavy steel door, replaced the trap door and covered it with the rug.

"Why do you take so much trouble to safeguard the pliers?" I asked.

"Can't you answer that question yourself?"

"Naturally it is very valuable, but—"

"It is not only valuable, but exceedingly dangerous. Can't you imagine what would happen, if that tool should fall into the hands of an unscrupulous person? No safe or strong-box would be secure. Their contents could be removed as easily as if they were left absolutely unprotected."

"I see what you mean."

"Precisely. It is fortunate that Newton Schuler is neither a crook nor the friend of crooks. On the contrary, he is the worst enemy of all criminals. That's why my life is always in danger."

"You mean that you are——"

"Precisely what I said: The worst enemy of all criminals. I have practically completed an invention which will make the detection of crime absolutely certain. It ought to do away with crime for all time. When men and women learn that they can't do anything crooked without being found out, they will be forced to obey the laws."

"But what makes you think your life is in danger?"

"Unfortunately the news of my invention leaked out. At first I wasn't taken seriously, but I have reason to believe that some sinister representatives of the underworld have been spying on me and have learned that my crime de-

tector is anything but a joke. They realize that when my plan is put into effect it will be a death blow to their racks, and they are prepared to go to any extremes in order to prevent that. They have already tried twice to assassinate me."

I was about to ask him to tell me about these attempts on his life, but he sidetracked my inquiry by embarking on a lengthy explanation of the various models of four dimensional figures which he had constructed. So interested was I in the contents of Schuler's workshop that I did not notice how the time was passing. Finally, when daylight began to wane, I looked at my watch and was astonished to learn that it was after seven o'clock.

Apologizing for staying so long, I was just about to leave when Schuler said to me solemnly: "Mr. Kemp, you must realize that what I have told you and shown you has been in the strictest confidence. Before you leave I want you to swear to me that you will never reveal to anyone the location of my workshop or the nature of the work I am doing here."

"You may depend upon me to keep as mum as a clam," I assured him. "Thank you for your courtesy, and good-bye."

IN California there is little twilight. Although the sun had just dropped below the horizon, the pall of night had already fallen by the time I stepped forth from Schuler's laboratory. As I stumbled through the debris that encumbered the space between the building and the street, I fancied I heard footsteps behind me. I turned just in time to distinguish a shadowy form creeping along the side of the building. Whoever it was must have seen me turn, for he quickly ducked back out of sight.

My first impulse was to go back and warn Schuler of the nocturnal prowler, but before doing this, I tried an experi-

ment. Pretending that I had not noticed anything, I strode briskly to the sidewalk and walked in the direction of Santa Monica Boulevard. I passed two vacant lots before I came to a store building. Here I stopped, and, keeping my body well concealed, peeped around the corner of the edifice. I was just in time to see a man creeping stealthily across the lot in front of Schuler's shop. At first I thought it might be the inventor himself or his assistant, but when he reached the sidewalk, he straightened out and I could see that he was much taller than either of the two persons who belonged in that building.

He started toward me at a brisk walk, but when he saw that I was standing still, he slowed up until he was scarcely moving. I decided that the best thing for me to do was to hurry away from that lonely neighborhood. After I had covered a block or two I glanced back. The mysterious stranger was close behind me, following in my wake with the long, swinging stride of an athlete. When I came in sight of the brilliantly lighted thoroughfare, I changed my pace, loitering along in order to allow him to get ahead of me. He declined the opportunity, modifying his speed to correspond with mine.

Even then, I couldn't believe that he was deliberately following me, so I tried another experiment. Quickening my walk until it was almost a jog trot, I completely circumnavigated the first block I came to. At each turn I looked back, only to find that my unwelcome companion was still a few yards behind me.

Remembering what Schuler had told me about the attempts which had been made to murder him, I began to feel a bit nervous. While I was trying to decide what to do about it, I continued to hurry onward until I had left the business section of Hollywood behind me, and found myself in a dimly-lighted side-street

which was overhung with huge, spreading pepper trees.

All at once it dawned on me that the most sensible thing to do was to stop, accost my pursuer, and let him know that he was trailing the wrong man. But deciding what to do and the actual doing of it were two different things. I realized that I had picked a very poor spot to accost a man, who, for all I knew, was a desperate and unscrupulous footpad.

"Why didn't I do that when I was on Hollywood Boulevard?" I kept asking myself. By this time I was but a few blocks away from the apartment building in which my bachelor apartment was located. Panic, blind panic, incited by the fear of death, took possession of me. Spurred by the instinct that prompts a hunted animal to seek the protection of its lair, I made a dash toward home. A gust of wind blew my hat off, but I didn't stop to pick it up.

My sudden and unexpected spurt must have surprised my pursuer and I succeeded in increasing my distance from him by several yards, before he too broke into a run.

The apartment house was built on sloping ground and there was a long, cement stairway leading up to the entrance. Up these stairs I bounded, taking them three at a time.

I was about half way up when I heard what sounded like a pistol shot. It startled me so much that I tumbled and went rolling down the stairs. Though I wasn't hurt in the least, something told me not to move. Lying there with my heart in my mouth, I heard running footsteps. A large shoe was thrust under my body and I felt myself being turned over. Then the horn of an automobile sounded and my assailant beat a hasty retreat.

Several minutes elapsed before I dared to raise my head. The street was de-

serted. Nobody had paid any attention to the shot. Perhaps it wasn't a shot after all, I tried to reassure myself. After all, the sharp crack could just as well have been the back-fire of a motor, or the noise of a tire blow-out. But when I mounted the stairs again I found a steel-nosed bullet flattened against the third step from the top.

THE following day being Sunday, I stayed pretty close to my room. In justice to myself I must state that I wasn't exactly afraid. The word "cautious" would come closer to expressing my true feelings.

On Monday morning as usual, I went to my office in the Roosevelt Building, West Seventh Street, Los Angeles. That night, when I returned home, the manager of the apartment house called me, as I was about to enter the elevator.

"You had a visitor today, Mr. Kemp," he informed me.

"Is that so? Who was it?"

"Didn't leave his name. Said you'd know who called."

"What did he look like?" I asked.

"Great big chap. Over six feet. Wore a brown suit and a light grey cap. Big jaw, heavy eyebrows—looked like a prize-fighter."

"Was his left shoulder quite a bit higher than his right one?"

"I believe it was."

"Did he wear brown shoes—great big ones?"

"He certainly did."

"And was his shirt unbuttoned at the neck?"

"Yes. Then you know him of course."

"On the contrary—I've never met the man."

"Then how——" the manager started to ask.

But I interrupted him.

"What did he want me for?"

"He brought back your hat."

"Brought back my hat?"

"Yes. He said you left it at his place, Saturday."

"Did he ask for me by name?"

"Of course. I had to take something up to the third floor, and when I came back your friend was looking over the names on the mail boxes."

"That accounts for it."

"Accounts for what?"

"His knowing my name. My initials are stamped on the sweat band of my hat. All he had to do was find a name on your directory board corresponding to those initials."

"Do you really mean that he isn't a friend of yours?"

"Exactly—Why?"

"Because, I let him into your apartment."

This alarmed me and made me angry. "Do you mean to tell me you let a stranger into my apartment?" I cried in an irritated voice. "What in the devil did you do that for?"

"He said he wanted to go up there and leave a note for you. I never thought you'd object. He had your hat. I recognized it. Can you blame me for thinking he was a friend of yours?"

"I suppose not. But you were watching him of course during all the time he was in my rooms?"

"Most of the time. He was out of my sight for a few minutes while I went to get him an envelope."

"How utterly——" I was about to accuse him of being a fool and of helping a crook, but thought better of it and checked myself. After all, the manager was not really to blame.

Without waiting for the automatic elevator I bounded up the stairs and entered my rooms. In the center of the table was the hat I had lost that Saturday evening. Propped against it was a sealed envelope. I opened it and read this brief message:

"Stay away from Schuler's place if you know what's good for you."

This corroborated my suspicion, which had now become a certainty. My mysterious visitor and the very man who had shot at me were one and the same person.

EVEN then I was puzzled to know why this man had gone to the trouble and taken the risk of entering my room. If his object was merely to get that warning note into my hands, he could have dropped it in my mail box or left it with the manager. Naturally I thought of robbery but I soon dismissed that as a possible motive. My only valuables consisted of a watch, a stick pin, and a few dollars of change and these were always carried on my person.

While I was sitting there, knitting my brows and trying hard to solve this new mystery, the solution was worked out for me in a most unexpected and dramatic manner.

There was a knock on the door. I opened it to admit the manager and two other men. One of them was a police officer. The other was holding a gun in his right hand.

"Are you Norman Kemp?" he demanded.

"Y-Y-Yes," I stammered.

"You're under arrest! Put the bracelets on him, Cunningham!"

"Arrest?" I gasped. "What for?"

"For the murder of Police Officer Bolton."

At the mention of the name I recollected a sensational news story which had occupied a large portion of the front page in the Sunday morning paper.

At about six forty-five Saturday evening, two men had entered the Green Hat Restaurant on Vine Street, Hollywood, leaving an accomplice sitting at the wheel of a parked automobile. They held up the cashier and also the

customers, robbing them of several hundred dollars.

A passing motorist saw the two thugs as they got out of their car. Noticing that the motor was running, he became suspicious. He drove to the corner of Vine Street and Sunset Boulevard where Officer Bolton was stationed. The policeman hurried to the restaurant, arriving there just as the bandits were about to drive away. In reply to his command to stop, one of the robbers shot at him.

Bolton returned the fire. His first shot put the driver out of commission and stalled the engine. He fired again and winged another of the bandits, just as he was getting out of the front seat! The third crook jumped out of the rear compartment with his gun blazing. Officer Bolton's legs crumpled and he dropped to the pavement with a bullet in his right lung. In the resulting confusion, the murderer got away, although the other two bandits were apprehended.

They turned out to be mere children. The parents of both of them were honest, well-to-do citizens. Joseph Anderson, the younger of the two youthful criminals, was only seventeen years old. The other, Walter Brinkman, was nineteen. Both the boys were students of a public high school in a neighboring city. Their story was that the whole crime had been planned by the third man whose identity they claimed they did not know.

And now, through some unaccountable turn of circumstances, I was suspected of being that third man—the man who had murdered Officer Bolton!

The detective searched my apartment. In the bottom drawer of my dresser he found a Luger pistol and a quantity of small change tied up in one of my handkerchiefs. He separated the coins, putting those of the same denomination together, and counted them.

"Nine half dollars; twenty-one quarters; seventeen dimes and thirty-six

nickels," he announced triumphantly. "That checks exactly."

"What do you mean, checks exactly?" I shouted indignantly.

"It checks exactly with what was taken out of the Green Hat Restaurant's cash register. You see, it happened that the cashier had checked over her cash just before you walked in. She had it all written down on a piece of paper. This accounts for the change. What did you do with the bills?"

"You are barking up the wrong tree if you think this money is mine. I never saw it before," I exclaimed.

"Oh yeah? Well, you're going to have a swell chance to tell that story to the jury."

"But I can prove an *alibi*."

"How interesting. This looks like the work of the Brown Wolf Gang. Their specialty is to furnish *alibis* for any of their mob that gets into trouble. But, just for the fun of it, what is your *alibi*?"

I was about to mention my visit to Schuler's work shop when I suddenly remembered the solemn promise I had made not to tell anyone about him. So, I had to recourse to a fluff.

"Why should I tell you?" I asked. "I refuse to say another word until I've talked with a lawyer."

"That's another favorite gag of the Brown Wolf Gang," the detective declared significantly.

As they were taking me out I remarked casually, "By the way, Inspector, would you mind telling what made you suspect me."

"No, I don't mind. It was a tip from one of your own gang. He's sore at you because you double-crossed him. The man who phoned the tip to me said you'd know who he was, and that he didn't give a damn."

What happened after that was covered pretty well by the accounts in the newspapers, so I shall just summarize

very briefly the events which led to my being sentenced to hang for the murder of Bolton.

It will be remembered that Anderson and Brinkman, in order to save their own necks from the noose, turned State's Evidence and hung the entire responsibility for the crime on me. Though they had at first declared they did not know the name of the man who had enticed them to accompany him on the expedition of banditry, they changed their minds after they had talked with their lawyer. There was no doubt in my mind, but that the plot, to make me the scapegoat and to railroad me to the gallows, had originated in the mind of that same unknown man who had first tried to assassinate me and had afterward planted the gun and the tell-tale coins in my apartment.

At first I didn't realize the seriousness of my predicament. Firm in my belief that I could easily clear myself of this ridiculous charge, I had respected my promise to Schuler and had refused to tell where I was that Saturday afternoon. But when things began to look bad for me, I made a confidant of my lawyer. He tried to find Schuler's laboratory from my directions, but without success. Finally after a great deal of difficulty, I obtained permission to visit the place myself, accompanied of course by a heavy guard of detectives.

I found the building but it was vacant. When we located the owner of the property we learned that Schuler had moved about a week after my interview with him and had left no forwarding address.

With this last hope shattered, my morale was completely broken down. My lawyer advised me not to take the witness stand in my own defence. He said that the story I had told him would only prejudice my case. I had the feeling that he himself didn't believe me. Certainly no one else did.

My trial, sensational as it was, lasted

but a few hours. Almost before I realized what was happening I found myself in San Quentin Prison with the death sentence hanging over me. Anderson and Brinkman were sentenced to two years imprisonment each.

IT is a horrible thing to be condemned to die on the gallows—fearsome enough to a person who knows he deserves the supreme punishment—but infinitely more frightful to an innocent man who is being driven to that ignominious death by a ghastly mistake.

You can imagine how I felt as I sat there in my cell in "Murderer's Row," waiting and hoping, hoping and waiting, as the minutes ticked off at a terrific pace, speeding me relentlessly toward my doom.

One afternoon, just two days prior to the date set for my execution—a preposterous thing happened. I was sitting near the rear of my cell when a book was suddenly thrust into my hand. Where it came from was a baffling mystery. Though my quarters were not exactly roomy, I was far enough from the double grating-opening so that no human arm could possibly have reached me.

For at least half an hour I had not taken my eyes off the grated window in the door which revealed the tiny fragment of God's world still left for me to look upon, and it was utterly inconceivable that a stick or other object could have been thrust through that opening without my seeing it.

The possibility that the book might have been *thrown* through the barred window was equally untenable. Even if that could have been done in such a way that the article happened to fall on my hand, I would not have caught it and the book would have fallen to the floor. Instead, the object was gently laid against the tips of my fingers, exactly as if it had been handed to me by someone

close by. And there it remained for several seconds, balanced in a gravity-defying position, while I gazed at it with fearful astonishment. I had a feeling that it was being supported at the other end by something—something, that was alive and conscious but invisible! The instant my thumb closed upon the book, that something relaxed its hold and I felt the full weight of the volume on my hand.

So uncanny was this manifestation that it made my flesh creep. I felt a prickly sensation in my scalp which made me imagine that my hair was standing on end, "like quills upon the fretful porcupine."

I stepped to the door and looked out through the grating. Except for the guard pacing along the top of the distant wall, there was no living being in sight. Bewildered and alarmed, I returned to my seat on the bunk and examined the book which had come to me under such weird circumstances.

It was a treatise on the fourth dimension!

The title of the work and the name of the author have completely slipped my mind. I cannot repeat any portion of its contents from memory. On the other hand, some of the amazing conceptions, which were explained in it, branded themselves into my memory so deeply that I am sure I can reproduce them substantially as they were presented therein.

Opening the book at a place marked by a slip of paper, I started to read the chapter which was devoted to a consideration of imaginary beings, having less than three dimensions. The idea of this discussion was to show by analogy that, just as a three-dimensional creature can do things that would be regarded as miraculous by a two-dimensional being, so a person who could move through the fourth dimension, would be able to perform feats that would be incomprehen-

sible to an ordinary three-dimensional man.

The writer even went so far as to point out the limitations which would hedge a living creature existing in a world of only *one* dimension. Such a being he called a "Umodim." He compared it to a very thin worm—thinner even than the finest hair. Theoretically, in fact, it would have had neither width nor thickness, but only length. Such an animal could move only along a straight line, either forward or backward, but could not turn to the right or left, nor could it move either up or down. A single grain of dust placed in front of it and another one placed directly behind it would confine it as effectively as if it were placed in a closed box.

The "Duodim," or inhabitant of two-dimensional space would have more freedom of motion than the Umodim, since it could move to the right or left as well as forward and backward, so long as it did not leave the surface of the plane on which it had lived. If you can imagine a turtle so flat that it has no more height than a shadow, you will get an idea of what a Duodim would be like. Such a creature could not move up or down. A rectangle drawn around it with a lead pencil or with ink would constitute a prison cell from which it could not escape without penetrating the graphite or ink which surrounded it.

If a three-dimensional being should happen to see the Duodim inside its confining rectangle and should lift it through the third dimension and place it outside the two-dimensional cell, the Duodim would be utterly at a loss to account for its escape.

In other words, things which are absolutely closed and impenetrable to a two-dimensional object may be wide open in the direction of the third dimension and may therefore be easily penetrated by a three-dimensional being or "Triodim."

By carrying the analogy a step further we may assume that objects which are closed to a three-dimensional being may be open in the direction of the fourth dimension, so that a creature who is able to move in the direction of the fourth dimension may easily pass in or out of the closed space.

AMAZING things could be accomplished by the "Tetradim" or four-dimensional entity. He could walk out of a prison cell as easily as you could step over a chalk line. He could enter a tightly locked safe, remove the contents and depart without opening the door or leaving the slightest scratch to betray his visit. He could eat a watermelon without touching the rind. He could place a lighted bomb inside a locked and sealed trunk without disturbing the outside in any way.

It would be impossible to confine the Tetradim by any means we know of. Ropes, handcuffs, and manacles would be absolutely useless. He would slide out of the most complicated knots as easily as a normal person would slip through a barrel hoop. When I read all these preposterous suppositions you can imagine how they interested me—especially the parts relating to escaping from locked cells, handcuffs and *knotted ropes!*

Another chapter which interested me discussed the possibility of building four-dimensional objects by combining a large number of three-dimensional units. Here again analogies were drawn between two-dimensional and three-dimensional space.

Theoretically the Duodim has no thickness at all, but it would be impossible for such a creature to exist. On the other hand we can easily imagine these "flatlanders," as being composed of some material like tissue paper or gold leaf, which, while having a small amount of thickness, is so extremely thin that it would not know it had more than the

two dimensions of length and width.

It would be entirely conceivable that such a creature could, by piling a large number of two-dimensional objects one on top of the other, build a solid which had an appreciable thickness and which therefore would have all the attributes of three-dimensional space. With such an object, the Duodim would be able to perform feats which would be puzzling and inexplicable to his two-dimensional companions. For instance, by climbing on and off of his three-dimensional object he could make his body disappear and reappear at will.

The author of my book advanced the amazing hypothesis that every object in the universe has a small amount of four-dimensional extension. The reason why we are not ordinarily aware of this fact is that this "Through," as it is sometimes called, is so small in comparison with the other three dimensions, that we cannot comprehend it any more than a being no thicker than a piece of tinfoil would be able to perceive the thickness of the objects around him.

But if a large number of three-dimensional solids are combined in such a way that they all project in the same direction into hyperspace, they would form an object having an appreciable amount of four-dimensional extension.

I'm afraid, that to the average reader these quasi-technical explanations have seemed somewhat complicated. To me, however, they were so fascinating and so interesting that I devoured the contents of that mathematical fantasy with the avidity of a man who tastes food for the first time, after a month of fasting. So absorbed was I in my efforts to grasp the principles of hyperspace, that I scarcely noticed how the hours slipped by. Almost before I could realize it, the eve of the day set for my execution was upon me.

The book was still in my hands when

two guards came for me. One of them noticed it and snatched it out of my hand.

"Where did you get that?" he demanded.

But before I had time to answer him an amazing thing happened. Despite the firm grip with which the guard was holding the volume, it seemed to flow out of his hand as if it were made of gas or some other fluid substance. It did not disappear but remained suspended in space about four feet above the floor of my cell.

"My God! The thing's haunted!" exclaimed the jailor, as he shrank into a corner to get as far away as possible from the object which was behaving so mysteriously.

There was plenty of light in my cell for clear vision and all this had happened directly before three pairs of eyes. The other guard had of course noticed it and his face turned a ghastly shade of green. He, too, drew as far away as he could from the levitated book.

Though the incident had astonished me, I could see no reason for being terror-stricken. Instead, I calmly reached out and took hold of the book. It may have been due to an overworked imagination, but I could have sworn that my hand closed over an invisible thumb, which slipped out from under my fingers as I grasped the volume.

As soon as I had it in my hands, the book behaved like any other solid object. I tried to make it float in the air again, but the moment I released my hold, it dropped to the floor with a thud which manifested clearly that it was real and substantial. With the guards watching me in pop-eyed terror, I picked up the book, opened it, thumbed through a few pages, closed it and gave it a few hard blows with my fist to show how solid it really was.

"Do you mind if I keep it now?" I asked the guard.

"Go ahead and keep it," they acquiesced, "but don't let it touch us, please!"

Came then that awful march from my cell to the spacious wooden cage in which I was expected to spend my last night on earth. The execution chamber of San Quentin Prison is on the top floor of a large building used for a workshop and library. It was reached by a wide and tremendously long, wooden stairway which hung to the outside of the building. As I staggered up these stairs, half-carried, half-dragged by the guards, who held me between them, I counted the steps, "One! Two! Three!" until I reached the number eighty-seven. "Almost a hundred!" I told myself—almost a hundred—all but—"and then, the horrible realization suddenly flashed upon me that on the morrow I would have to finish the climb of the thirteen additional stairs to the trap beneath the gallows—which would make the number exactly one hundred.

Strange as it may seem, this was not the first time I had climbed those stairs. Several months previous, while attending a lodge convention at San Raphael, I had joined a party on a tour of inspection of San Quentin Penitentiary. At that time, all the gruesome details of an execution had been explained to us.

We were shown the place where several new ropes hung with heavy weights attached to their ends, so that all the stretch would be taken out of them and there would be no danger of their giving even a fraction of an inch, when used for their grim purpose.

The method used for concealing the identity of the real executioner was also explained to us. The condemned man was forced to stand over a double trap door while the rope was placed around his neck, and the other end was tied firmly to a cross-beam overhead in such a way that there was very little slack.

The trap was tripped by means of an

iron sphere about the style of an old-fashioned cannon ball. This weight and two others like it, were supported by three cords which were drawn taut across a table in a small alcove adjoining the gallows. In that alcove were three prison guards armed with sharp knives. They were concealed from the doomed man, but could see the warden through a small slit in the wall of the room. At a given signal, each of them would sever the particular cord in front of him. Only one of those cords released the weight which in dropping unlatched the trap door; and no one knew which of the three men was the direct cause of the victim's death.

At the time I saw all these things and listened to the explanations of the attendant who was escorting us through the institution, I little thought that I myself would one day walk up those thirteen steps and stand beneath that cross-beam, waiting for the thud of the falling weight that would hurl me into eternity.

On several occasions during a rather eventful life, I have been perilously close to death. I have skated into an open hole and have been sucked under the ice by a turbulent river. I have been in an automobile which turned completely over and was so badly demolished that its body was torn completely away from the chassis. I have seen my comrades mowed down like wheat on all sides of me, as my company charged against a German pill-box. I got out of that river without even catching cold. The automobile accident didn't so much as knock my glasses off—and during all the time I was in France, I wasn't wounded once.

I'm not going to stretch your credulity by telling you that I wasn't frightened on either of those occasions. Being only human, I was scared—thoroughly scared—scared stiff. And yet, I had a most peculiar hunch that I was going to come out all right—because my time to pass on,

had not yet arrived. And I had exactly the same kind of hunch even now, as, with the hempen rope tightly drawn around my neck, I stood on the insecure trap which vibrated beneath my trembling feet.

IT is hardly necessary for me to recite the preposterous events that attended the attempt to execute me. The weird details, as they were described in newspapers throughout the world, are familiar to everybody. Many writers have told, how, right before the eyes of scores of witnesses, my body slowly slipped through the tightly knotted noose and melted into thin air. The ghastly horror, which gripped every person there, has been vividly described, both in words and in pictures. It is already well known that six strong men, including the prison warden, who had witnessed innumerable executions, fainted dead away, and that several reporters and other spectators were seriously injured in the panic which culminated in a mad flight down that long, ominous stairway.

One part of this unbelievable story is now being made public for the first time. It was my own experience, the experience of a man who was snatched from the dire embrace of a shameful death.

As I said before, even up to the time when I felt the noose around my neck, I had one of those mysterious hunches that my time had not yet come. However, I didn't have the slightest inkling as to the way in which my rescue would occur. If I did think about this phase of the matter at all, it was along the more conventional lines—a messenger boy dashing madly into the room, waving a reprieve signed by the Governor—or something of that sort.

What really happened was this: I felt two hands grasp my arms just below the elbows. An instant later my feet were dangling in the air. I thought at first that

the strap had sprung and I wondered why I felt no pain. Then I became conscious of the fact that the rope was no longer about my neck. My hands were bound behind my back and it was of course, impossible for me to pull the blindfold from my eyes. For that reason I couldn't see what was going on, although I was moving through space. The direction of this motion was a most puzzling thing. It was neither horizontal nor vertical, neither up or down—neither forward nor backward—neither to the right nor to the left. Nor did I seem to be moving along a curved or diagonal path.

For ten or fifteen minutes I drifted through space. Then I felt my feet touching something solid and I was gently forced into a sitting position. I heard the whirr of a starter, followed by the grating of gears and a slight jolt, which told me I was in an automobile which had just been set into motion. A moment later the rope about my wrists was untied and the handkerchief was snatched from my eyes.

You may imagine my astonishment when I found myself looking into the face of Newton Schuler!

We were in a small sedan, spinning along the road leading to San Raphael. At the wheel was a young lady. All I could see at first was the back of her head, which was exactly like the backs of thousands of other female heads. The side and rear curtains of the car were drawn.

"Mr. Schuler!" I gasped, as soon as I could get my breath. "How did I get here? What does all this mean?"

"Oh, I see you remember me. Why do you ask me what it means? Can't you understand that I just learned of your predicament, and I came to your rescue in the only way that was feasible—that is by carrying you off into hyperspace."

"You mean you released me by pulling

in the direction of the fourth dimension?"

"Certainly, I thought you would be sure to understand what was happening, especially since I took the trouble to prepare you by smuggling to you that book on the fourth dimension."

"I got the book O. K. and I read it from cover to cover. But even after all the marvelous things you showed me in your laboratory that day, I didn't think it possible for a person to escape like that. And to tell you the truth I don't believe yet that such a thing as the fourth dimension actually exists."

"The best answer to your doubt is this: You are right here, safe and sound, instead of dangling at the end of a rope in the execution chamber of yon penitentiary. The only way I could accomplish this was by carrying you through the fourth dimension, and I'd like to see you figure out any other explanation of it."

"But how in the world were you able to move in the direction of the fourth dimension?"

"With the aid of these four-dimensional stilts and he pointed to a pair of peculiar objects lying in the bottom of the car. They looked something like the stilts I used to strap to my legs when I was a youngster. The only unusual thing about them was that they seemed to be composed of wooden spheres about the size of marbles, which were grouped together like bunches of grapes.

"Just a little invention of mine that I worked out in odd moments," Schuler explained in a matter-of-fact way. "There's not much to them. You remember reading in the book that every three-dimensional object has a small amount of extension in the direction of the fourth dimension. All I did was to combine a large number of three-dimensional solids until I had built up something with an appreciable amount of four-dimensional size. When I put these stilts on

my feet they have the effect of lifting me a foot or so outside of the three-dimensional space. That's all that is needed to make my body entirely invisible to any three-dimensional being. When I am wearing the stilts, a solid building looks to be like a plan drawn on a sheet of paper. I can step over, or through the walls, as easily as I can walk over a chalk mark. When I rescued you, I merely strapped on the stilts, stepped across the prison walls, entered the execution chamber and lifted you far enough into hyperspace to make your body also invisible. Then I carried you to the place where Eunice had the car parked."

"You must have gone to an awful amount of trouble on my account," I said. "What gets me is why you went through all this rigmarole when you might have secured my release by going to the Governor and telling him I was with you at the time the murder was committed."

"But I just found out about it. You see, I pay very little attention to newspapers, and it was only by chance that I saw your picture in the *Chronicle* and recognized it. There was no time to lose. I didn't dare to take chances on being able to convince the Governor. Besides, there are strong reasons why wide-spread notoriety right now would be ruinous to me. So, I decided to use the more direct method of saving you. Luckily the stilts had been perfected and were ready for use."

"I suppose I ought to feel grateful to you," I told him. "There's no question but that you saved my life—for a while at least. But don't you realize that I am still a fugitive from justice—that I am in momentary peril of being apprehended and dragged back to the gallows again? My photographs have been reproduced so many times and in such a multitude of publications, that there is hardly a man, woman or child, in the United States,

who is not familiar with my mug."

"What you say is true," Schuler admitted. "But I couldn't see any other way out of it. However, you may rest assured that I shall do all I can to prevent your being discovered and captured again; and if everything works out according to my expectations, I'll be ready inside of a month to come out in the open and exculpate you."

Just then an ominous sound came to my ears. It was the piercing shriek of a police siren.

"Quick!" exclaimed Schuler. "Put on these stilts!" and with feverish haste he strapped the four-dimensional objects on my legs. "Now stand up!" he commanded.

"How can I stand up without bumping my head?" I asked stupidly.

"Do as I tell you, you idiot!" he yelled, and he fairly shoved me to my feet.

I didn't bump my head. Instead I discovered that most of my body was protruding in a most peculiar position outside the automobile. What I saw is impossible to describe accurately. My head was neither above the roof nor alongside it. The amazing thing about it all was, that, while I seemed to be outside the car, I could still see everything inside the vehicle. Every portion of the exterior was also plainly visible to me. It was as if I was looking at images of the automobile in a series of mirrors which reflected the top, bottom, front, back and both sides all at the same time.

I got a similar "all around" view of the motorcycle officer who had just overtaken us. In response to his command, Eunice pulled over to the side of the road. The officer dismounted and opened the door of the car.

"What's the trouble, Officer," Schuler wanted to know. "Hope we haven't fractured any speed laws."

"No," the policeman assured him. "There was nothing the matter with your

speed. I stopped you because you looked kind of suspicious with all your curtains pulled down. There's been a lot of rum-running and hi-jacking around here and we have orders to stop any car that looks phoney."

"I can easily explain the drawn curtains," Schuler alibied. "You see, I have trouble with my eyes. The doctor told me to keep out of the direct sunlight. That's why I'm sitting back here instead of being on the front seat with my niece. If you think I'm a bootlegger, you are, of course, at liberty to search the car."

"That won't be necessary. It's easy enough to see you are O. K. Sorry to have troubled you, but you know we have to follow orders."

"Why certainly, Officer. I'm glad to see that we have at least one man on the force that is right on the job and looking after the taxpayer's interests."

"Thank you, sir," said the policeman, as he mounted his motorcycle and drove on.

Schuler waited until the officer was out of sight, then, calling me by name he said: "Sit down on the seat of the car and lift your feet off the floor."

I tried my best to obey, but instead of landing inside the car, I sat down with a thud, *right in the middle of the road*. A noisy, ramshackle automobile was bearing down on me at a thirty-mile clip. The driver saw me and swerved just in time to avoid hitting me. With a groaning of brakes the small car came to a quivering stop. Before the men had time to open the door, I stood up on the stilts, which of course made me invisible.

The driver of the car proved to be a middle-aged colored man. If you can imagine a Negro turning pale, you will have a clear idea of how this man's face looked when he found the road vacant. The land adjoining the highway for several hundred yards was flat and barren.

There wasn't a tree or shrub or rock large enough to conceal a man.

The colored man approached the car and addressed Schuler: "Excuse me, suh, but did you-all see what became ob dat feller what was settin' out dere in de middle ob de road jest now?"

"I didn't see anyone in the middle of the road," Schuler lied. "You must have imagined you saw something there."

"Says which?"

"I said, it must have been imagination."

"Well, if dats de case, 'magination muss be wearin' blue pants and a grey shirt, 'cause dats what I don seen out in the middle of de road just now."

"Haven't been drinking, have you?"

"Says which?"

"I asked you if you have been drinking anything."

"Wall, I ain't presactly been drinkin' anything. All I had was two little sniffers ob sympatic gin."

"That's what the trouble it. The liquor went to your eyes. You've been seeing things."

"Says which?"

"You must have seen a ghost that wasn't there."

"Seen a ghost what wasn't dere? Dat's about the scarest thing I is of, unless it's seeing a ghost what is dere! An'—believe me, if gin is goin' to defect me like dat—I'll never tech another drop as long I lives—no suh!" And with a combined expression of fear and bewilderment still on his ashen countenance he clambered back into his car and was on his way.

Once, again, Schuler told me to resume my seat in the car. "Try again," he directed. "And if you miss the car this time, see to it that you flop on the side furthest from the middle of the road."

I finally managed to locate the cushion

of the car and a moment later Schuler removed the four-dimensional stilts from my feet. We drove on until we had almost reached the outskirts of San Raphael. Here Eunice turned off on a narrow dirt road which led to the edge of a picturesque and sequestered cove.

Of all the astonishing things that had happened that day, the thing that surprised me most was the discovery of a sea-plane moored beside the bank and cleverly concealed by the foliage of the trees and shrubs which fringed the water.

Schuler and I got out of the car and climbed aboard the plane.

"You'd better lie down in the cock-pit," he advised me. "Otherwise someone may see you and turn you in. Eunice will take the car back to San Raphael. It's a 'Drive it-yourself' auto that we rented. I've arranged to pick her up near the garage so she won't have to walk clear back here.

He waited awhile to give Eunice time to reach her destination. Then he started the motor and taxied over the short distance which separated our starting place from San Raphael.

I kept out of sight and for that reason I did not see Eunice, until I felt the nudge of a rowboat against the side of the fuselage and heard her voice say, "Thank you for rowing me out. Here's a quarter for you."

A moment later she was aboard and the sea-plane was roaring along, skimming the water like a frightened duck. When we had reached an altitude of a few hundred feet, I stuck my head out and was surprised to see that we were headed in a northwesterly direction instead of flying over San Francisco Bay.

It was necessary for us to climb quickly in order to gain altitude enough to carry us over Mount Tamalpais, which I recognized by the buildings on its summit and the steep coaster-railway plunging down into the Muir Wood.

ON we droned, high above the giant redwood trees, until we suddenly dipped down into a sequestered valley and came to rest on a beautiful lake which nestled in the midst of an impenetrable forest.

Almost in the exact center of the lake was a picturesque wooded island. Not a sign of human habitation had been visible from the air, but from the surface of the lake we could see three buildings constructed of canvas stretched over light, wooden frames. All of the buildings were cleverly camouflaged to imitate the vegetation of the island.

Schuler ran the sea-plane into the hangar, which was built over the lake. As we stepped ashore, a motherly lady of sixty years or so, appeared at the door of the larger cabin and came to greet us.

"This is my wife," said Schuler. "And by the way," he added, "I guess it's about time I introduced you to my niece, Miss Eunice White. You two young people ought to get acquainted with each other."

Mrs. Schuler turned out to be a most hospitable and charming hostess. Her niece was also very agreeable, although I cannot say sincerely that she made a very favorable impression on me. Like so many young women of these emancipated times, she was as hipless and flat-chested as a boy. Her close-cropped hair and mannish shirt accentuated the sexlessness of her appearance. To me she was anything but attractive, although she subsequently turned out to be an excellent pal.

When the formalities of introduction were disposed of, Schuler said to me, "I suppose you wonder why I selected this out-of-the-way place for my home and my work-shop."

"Naturally I am interested," I told him.

"Things were getting too hot for me in Los Angeles," he explained. "You remember I mentioned the fact that I was working on an invention to make crime

extremely perilous and that sinister influences were opposing me. Well, they located me on the very first day you visited me in my laboratory on Crescent Street. Just after you left, I discovered five sticks of dynamite with a lighted fuse attached to them, under one corner of my building.

"Then and there I decided that it was time for me to depart, so I packed up hurriedly and moved to Burbank. For three weeks we worked there unmolested, then I discovered that I was being spied on again. In the meantime, Eunice and I had been scouting around in an amphibion plane, and had located this lake. It looked like an ideal spot for us to disappear, so I boldly took possession. We moved our equipment up here by installments. We are about twenty miles from the nearest railroad station and twelve miles from an automobile road. The only way to reach this lake is from the air, and I'm thankful to say that my enemies haven't succeeded in locating me—at least not yet. You couldn't find a better place to hide," Schuler continued. "No one would ever find you here. You are welcome to stay with us as long as you wish. Hope you don't mind roughing it. Our accommodations are not exactly like those of a first-class hotel—and on the other hand, you may find them a trifle better than those you enjoyed at San Quentin. We three have been quite comfortable here, and we can easily find room for you without crowding.

"The small cabin you noticed is my laboratory and work-shop. I located a waterfall over in the hills to the north of the lake and we installed a small turbine there which provides all the power we need. We even cook by electricity, so there's no danger of smoke giving our hiding-place away."

"You certainly have a wonderful place here, Mr. Schuler," I complimented him, "and I want you to know that I appre-

ciate all the trouble and the risk you took to help me escape. I suppose there is nothing for me to do but accept your hospitality. At the same time, I don't feel quite right about all this business."

"Why not?"

"Because it means that now I am an outlaw—a fugitive from justice. It's the first time in my life that I've done anything really criminal—anything for which I deserved to be put outside the pale of the law."

"Criminal?" Schuler exclaimed. "Just what do you mean by that?"

"I mean that I broke out of prison. That's criminal, isn't it?"

"Perhaps it is. And that means I am a criminal too, since I engineered the whole business. And Miss White became a criminal when she helped you escape."

"Excuse me, I didn't mean to insinuate anything of that sort."

"Then suppose you try to be sensible. In one way it was reprehensible for us to conspire to save you from the gallows, but in a broader sense, we were doing something highly moral and exceedingly good—not only for you, but for everybody else concerned. Imagine how your friends the Warden, the Governor, the Prosecuting Attorney, the Judge, and everybody else, that had anything to do with convicting you and carrying out your sentence, would feel if you had been executed and shortly afterward had been proven innocent. All that grief and remorse has now been spared them. Instead of being the enemies of justice, we have been instrumental in seeing that grave injustice was prevented."

"I guess you're right," I concurred. "But at the same time, I'd like to be in at position to prove my innocence so I can give myself up."

"Don't worry about that," said Schuler. "Within a few weeks I expect to have my new invention ready for use. With it

I shall be able to prove your innocence beyond any possible doubt. It will also establish the identity of the real murderer. In the meantime I suggest that you remain here as my guest. If you feel like it you may join us in our work. Your training ought to be of immense value to us."

I gladly accepted Schuler's suggestion that I help him in his laboratory. I learned to admire Eunice much more when I saw her in action. But my admiration was not that of a man for a maid. It was utterly devoid of sentimentality and was predicated entirely on her skill and resourcefulness. She nearly always dressed in overalls. Since she looked and acted like a man, I treated her as a fellow workman, rather than as a woman companion.

At least twice a week Eunice—who was a licensed pilot—went to Oakland in the sea-plane for supplies.

After I had been on Schuler's Island for about two weeks, I one day begged for permission to accompany Eunice on her foraging trip. Much to my surprise the inventor offered no objections, and Eunice seemed pleased to have me go along.

"Better not go ashore," Schuler admonished me. But with my customary proclivity for refusing to take good advice, I did go ashore at Oakland.

It was just my luck to be seen by a detective who had been working in the District Attorney's office at the time of my arrest, and who knew me well. It was just my luck too, that Eunice had trouble in starting the plane, which delayed us in getting away. It was just my luck that we were close to an airport and that the detective was able to secure an airplane all ready for flight.

When I succeeded in eluding the sleuth long enough to gain the sea-plane I was foolish enough to think I was safe, until I saw the pursuing plane swiftly over-

taking us. In order to make sure that we were being followed, I directed Eunice to change her course several times, and each time the other flyer trailed after us.

It was then that I suddenly reached a momentous decision. Eunice and I were able to converse easily by means of a speaking tube, which penetrated our helmets just outside opposite our ears.

"There's only one thing to do now," I shouted, "and that is to take me back to San Quentin. If I get there, and give myself up before that detective reports me, there may be some chance that they will be lenient with me. On the other hand, if I am captured, they may take a notion to hang me immediately."

"But there is no need for you to be captured," Eunice protested. "I'll take you back to our lake. That plane can't land on water, and there's no other way for them to get down to us. By the time they could get hold of a sea-plane, you could be somewhere else."

"But don't you see that it would never do to give away Mr. Schuler's hiding place? He'd have a flock of detectives and reporters swarming around the place, and the premature publicity would tip the whole thing off to his enemies and would probably ruin him."

"That's right, I never thought of that. It would be a shame for anything like that to happen, especially now when he is so close to the goal line."

"It won't happen if I can help it. Both you and Mr. Schuler have been mighty good friends of mine, and I don't intend to betray him now. So you may as well head for San Quentin. It's lucky that the pen is built at the water's edge. I'm the one they're after and I'm sure they won't bother you after you get rid of me."

It took but a few minutes to cover the distance to the penitentiary, and Eunice made a perfect landing in the little bay adjoining the prison grounds. She taxied

as close as she could to the water's edge, and I leaped out and waded ashore.

The airplane circled around for a moment or two and then attempted to land on a stretch of beach. They made it all right, but hit a bump and broke the propeller, which of course but the plane out of commission. Eunice lost no time in getting into the air again. I saw the flutter of her handkerchief as I stood there upon the bank and watched her melt out of sight beyond the hills to the North.

You may imagine the amazed look which came over the face of the attendant who admitted me to the Warden's office and the equally astonished expression which the head of the prison gave me.

"I came to give myself up!" I announced. "I'm innocent as I have maintained from the start. The story I told was the gospel truth, and the man who helped me escape did it because he knew I was innocent. Rather than get him into

trouble, I decided to give myself up—so here I am."

"Well, I'll be a nasty name!" the Warden exclaimed. "Do you mean to say you haven't heard the news?"

"What news?" I wanted to know.

"Haven't you read the papers?"

"Not for the last three days."

"That accounts for it. The two kids that framed you got scared when we told them about how you made your getaway from the gallows right in front of our eyes. They thought there was something supernatural about it. Ever since it happened they have been hearing things and seeing things. Anderson finally broke and confessed that they framed you and that they had never seen you before. When Brinkman heard that his pal had squealed, he came clean too.

"And I for one, am darn glad we didn't hang you!"

"Me too!" I grinned.

THE END



Within Sight of Hell

By ALCAN HIRSCH, Ph.D.

This is a story that holds one to the end, and the end is a happy one. The World War has been responsible for many changes in the mentality of sufferers, and the term "shell-shocked" is indiscriminately applied to many widely different types of sufferers. The story is of a man who was in the war and suffered there, and nearly lost his life. But it is not a tragedy.

Illustrated by MOREY

WARDEN BENNETT shifted his cigar but not his position. "The execution of this man, Clark, will take place as scheduled at twelve o'clock to-night, Johnson," he said addressing the newspaperman seated before his desk, "unless you have some new evidence that I can present to the Governor for a respite."

"I haven't any evidence regarding the crime he committed, Chief," the reporter replied, hitching his chair closer, "but I think the story, my paper is going to run to-morrow, will arouse a lot of sentiment against the Governor, and it may have a great deal of political influence in the long run. There's no telling how far a thing like that will go once it gets started. But to-morrow will be too late. I've simply got to do something in a hurry to save my friend's life if I possibly can."

Johnson looked desperate. "I sent a telegram to the Governor myself, but I don't know how much good that will do. Can't you call up the Governor yourself, Warden, and tell him that this man sentenced to die in the electric chair to-night has been identified?"

"But Johnson, you can't positively identify a person from a photograph."

"Can't you let me see him, Chief, if only a few minutes," the reporter pleaded.

"I've already told you a dozen times that it's strictly against the rules." The Warden spoke firmly but not unkindly.

"What are rules for except to be broken on occasions like this? Put yourself in my place, Chief. My pal's caught like a rat in a trap. Why, I didn't know anything at all about this case until this morning, when I returned from covering that insurrection down in South America. All of a sudden I saw a picture in the paper and I recognized an old buddy of mine, "Smiley" Rogers, one of the best friends I had across the big pond during the World War. Underneath his picture was the name Jim Clark, but there's no doubt that it's "Smiley" Rogers. Then I read the column alongside stating that this man is to be executed to-night for a terrible crime, an atrocious, inhuman murder. I just couldn't believe it."

"It's hopeless, Johnson," the Warden interposed. "It's too late now to do anything. Besides, I'm sure that you're mistaken; it's just another one of those close resemblances, that's all."



The only thing that I definitely remembered was that my plane crashed just as I reached our lines, after a raid over the German trenches.

"No, it's not," the reporter insisted. "I thought too that I might be mistaken so I got the original photographs from our files. There's no mistake, Warden; it's Smiley all right, my old friend. There's something different about him; there's only one Smiley in the whole world. Why, Chief, he was one of the nicest, kindest and gentlest men you ever saw; he wouldn't have hurt a fly. All the little French kids were just crazy about him, he was so lovable. He had a heart as tender as a young girl's."

"This fellow, Clark, is just the opposite, Johnson," Dr. Foster, the prison medical adviser, who was present, asserted.

"Well, he must have been mentally deranged by that airplane accident, then," Johnson insisted. "You know he was one of our best aces, but a short time after I last saw him in France, I heard that he was in a bad smash-up."

"That's strange," the Warden admitted. "It seems impossible that he can be your friend and yet this prisoner, Clark, while he has practically nothing to say, does mumble to himself at times about airplanes and points to his head. It's probably just a coincidence that's all. This inhuman beast can't possibly be your friend. Now I have some work to do, Johnson, so I'm going to ask Dr. Foster here to tell you briefly about Clark, seeing that you've been out of the country. The doctor is very familiar with the case, and you'll soon see that you are mistaken."

"I'll be very glad to tell you what I know about it, Johnson," Dr. Foster began, "as I'm deeply interested. You see, Bennett and I were boyhood friends and room-mates at college, and when he was appointed warden I became a sort of medical consultant to this institution. I advised him on difficult problems, psychological ones principally, and I have usually been present at the electro-

cutions. A few weeks ago he requested that I come up here right away, as he wished to consult me about a strange case that worried him a good deal.

"When I arrived he told me all about Clark who had been convicted and sentenced to die in the electric-chair for one of the most cold-blooded, ruthless crimes imaginable. He had brutally attacked with his bare hands a young doctor, an interne who was out on an ambulance call, apparently without the slightest reason. Clark is one of the strongest men you ever saw—"

"THAT'S Rogers all right," Johnson interrupted.

"Well, it seems that nothing much was known about his past," the physician continued, "as he wouldn't talk but would just sit brooding by the hour without opening his mouth. The warden said he could scarcely get a single word out of him. He acted just like a moron and seemed to have the mentality of a young child. Ever since his incarceration Clark has been very sullen and morose. Little was known about him, except that he'd had quite a lot of trouble in the neighborhood in which he lived. He would be very docile and pacific for a long time, and then without the slightest warning he would have a sudden outburst, often assailing total strangers. He had interfered in several quarrels, particularly where a woman was involved. It seems that he couldn't bear to see a woman in tears. He was very much feared in his district and had been reported to the police, who had warned him several times."

"That is peculiar," the reporter admitted. "Smiley was always friendly with everyone; that's how he got his nickname."

"He seemed very hostile towards us doctors, and was apt to assault a physician on the mere sight of his medicine-

case. That was one reason why his lawyer couldn't get very far with his insanity plea. Clark wouldn't let them even approach him, if he knew they were medical men, and of course that prejudiced them all. The alienists gave long-winded, technical explanations on the witness-stand. They talked at great length about mental aberrations, mind-gaps, aphasia, war-shock and the like, but not one of them would come right out and say that he was insane. They left him within the law.

"His lawyer made a strong fight for his client's life," Dr. Foster continued. "He said that Clark's antagonism for the doctors, whose testimony might have saved his life, clearly proved that he was insane. His counsel claimed that only a crazy person would act like that. But it didn't go with the jury. The prosecuting attorney made too much of Clark's brooding sullenness, his uncontrollable murderous temper, as he called it, and branded him as a grave menace to the community."

"Tell him about your own first meeting with Clark," Warden Bennett said, looking up from his desk.

"I'm just coming to that," Dr. Foster replied. "After the Warden had acquainted me with all the facts that I've just told you, Johnson, he suggested that I take a look at Clark. He warned me, however, not to say that I was a doctor, but to pretend that the Governor had sent me.

"So the Warden and I walked across the yard to the separate building which houses the cells for condemned men, or, as it is called around here, the Last Mile. It may be weakness on my part, Johnson, but I always have a sudden feeling of depression, when I witness the last lap in the lives of the condemned. One or two of the prisoners greeted the warden as we passed their cells. I recognized Herrick whom I had treated in

the prison hospital a short time previous. His beady eyes recognized me also, although he said nothing.

"The chief guard unlocked a door about three-quarters of the way down the corridor and the Warden and I entered Clark's cell. Bennett spoke to him pleasantly, introduced me as an emissary of the Governor's and left us alone. The Warden and the guard stood in the corridor near the cell-door.

"Clark was a huge man. He sat on the edge of his bunk with his head bowed and his large hands, tightly clasped, between his knees. I stood near him with my back to the door. He hadn't moved or uttered a word since I entered his cell; he seemed like a person drugged or in a trance. I spoke to him in my friendliest manner. I told him that the Governor had asked me to come and have a talk with him and that I'd like very much to help him if I possibly could. He mumbled something to himself in a deep low voice without looking up, but I couldn't understand what he said.

"I WAS about to seat myself when a shrill shout penetrated the stillness of the Death-House.

"Don't let'em fool yer, Clark; dat's a doc in dere wid yer." I recognized Herrick's peculiar accent.

"Like a flash the lethargic figure before me sprang into action. I only remember the chair being instantly overturned, an enormous claw-like hand reaching out for me, and the Warden pulling me out of the door. Only his prompt action saved me from serious injury."

"That gives you a very good idea of what a brute that fellow, Clark, is," Bennett said, laying down his pen. "Can you still believe, Johnson, that he's the same chap you knew? Doesn't that convince you?"

The reporter seemed so upset by this recital that the doctor tried to divert his mind from Clark by asking, "Did you have any interesting or exciting experiences down in South America?"

"Well, if you call nearly getting killed exciting, and not from bullets either, I certainly had plenty," was Johnson's response.

"I didn't think those revolutions down there were bloody," the Warden remarked. "What happened, if it wasn't bullets?"

"I had a run-in with old Dame Nature."

"Tell us about it," Dr. Foster urged.

"Well, I was with a group of Federal officers way up in the mountains, where the rebels had been carrying on a nasty guerilla warfare. One day, without any warning at all, we ran into one of those sudden thunder-storms; it certainly poured cats and dogs, and we had to take refuge beneath some trees. Suddenly there was a blinding flash, and I felt as if a gigantic hand had shoved in my chest. I don't know if I was knocked out for a time or not. The next thing I knew, I lay sprawling on the ground; the group of officers resembled a stack of cards scattered by the wind. One chap was completely nude; all his clothing had been stripped from him by the lightning-bolt; even his shoes and socks had completely disappeared, but he, personally, was practically unscathed. Fortunately no one was killed although many were badly shaken up. I had heard of such freaks of nature, but I never would have believed it if I hadn't seen it with my own eyes."

Johnson arose from his chair and shook hands with the Warden. "You won't change your mind, Chief?"

"You more satisfaction, but I must obey

"I'm sorry, Johnson, that I can't give the law."

"I know how you feel about him, Warden. Still, that war was a terrible thing. Do you know that the American Legion are still looking for dozens of invalidated men, who have completely vanished off the face of the earth without leaving a trace?"

The Warden did not reply but arose from his chair, indicating that the interview was finished.

The reporter left the room looking very discouraged and depressed.

The Warden turned to Dr. Foster. "Do you think it's humanly possible, George, that this beast, Clark, could once have been the gentle person whom Johnson pictured?"

"The older I get, the more I'm inclined to believe that almost anything is possible these days," the physician replied. "Bennett, just between you and me, we really know very little about the fundamental workings of our body, and of all our organs, our knowledge of the human brain is the least of all. Of course I wouldn't say this before any of my patients, but each person's mind is like a vast photographic gallery to which he alone has a single key. If that key is lost, then the gallery is absolutely sealed until the key is found again."

"In that case, this wretch Clark is lost forever. His life is just about finished."

"It's pretty close in here." Dr. Foster went to the window, opened it wide and leaned out to get a breath of fresh air, before the unhappy job which lay ahead. Below him he could see the approach to the prison-entrance, near which the customary crowd of morbid onlookers had assembled. He looked beyond; it had stopped snowing, and the crescent moon hung low in the western sky, too beautiful to seem real. The new-driven snow had blanketed and bedecked the surrounding landscape, so that it all appeared like a veritable fairy-land. An

eerie beauty lay over the country-side, suggesting laughing sprites, happy elves,—a joyous dreamland. He glanced to the left. Here the stern grey walls of the penitentiary rose sheer and stark, barren of even the temporary decoration of snowflakes. Within these unfriendly walls a human life was about to be taken. A chill seemed to shake the doctor. He shut the window. -

AT five minutes before midnight the Warden, Dr. Foster, and the guards who were to escort Clark to the electric-chair, entered the Death-House. Clark was seated on the edge of his bunk, with his head bowed and his hands clasped. He had refused to see any clergyman and had also made no request for the special last meal, which is a customary privilege granted the condemned. The guards opened his cell-door, the strong body-guard surrounded the prisoner, and the slow, tragic death-march began towards the fatal green door at the end of the corridor. He did not answer any of the "So long, Clark" greetings flung at him from the dry lips of his fellow-condemned, whose pale faces pressed against the cold bars of their cells.

The condemned man offered no resistance whatsoever, but with bowed head and stooped shoulders, walked dejectedly, unassisted and unsupported, towards his doom. He seemed as if dazed or in a stupor. It was indeed a sad, pathetic sight to witness the bent figure of this once strong man, crushed by life, indifferent to his fate. From his position behind him Dr. Foster could see his slit trouser-leg flapping helplessly as he walked. In spite of the unjustifiable brutality of his crime and his undisputed guilt, an uncontrollable wave of sympathy swept over the doctor.

The small procession slowly filed into the death-chamber where the grim oak chair with its ominous electrical acces-

sories awaited the doomed prisoner. A small group of men, the witnesses required by law, were seated upon the hard wooden benches. The district attorney who had so triumphantly secured his conviction was not present, but had sent one of his assistants. A few privileged members of the public at large; the brother of the murdered victim; the newspapermen who would carry the last permissible detail of this execution to the far corners of the country in time for their readers' breakfast regalement—all had gathered to see Clark die.

The prisoner walked to the chair and sat down; his eyes were downcast, and his expression impassive.

The warden stood beside him and in a low voice read the death-warrant. When he had finished, he turned to the tragic figure seated in the electric-chair.

"James Clark," he said, "you have heard the dictates of the law. Have you anything to say?"

The condemned sat silent and immobile.

The warden nodded to his chief deputy. The assistants quickly and expertly strapped their victim, inserted the moistened electrodes in their holders, and carefully adjusted them in place. A guard approached with the sinister black hood which effectively conceals the features of the condemned from the audience. The last glimpse of his face revealed no change in his indifferent expression.

All was in readiness. The hushed tenseness of the assemblage showed how affected even the most calloused and cynical were, by the spectacle of this soul now on the brink of eternity. Every eye was riveted upon the stern face of the Warden whose duty it was to give the signal to the official electrician waiting at the switchboard.

After what seemed an interminable interval the Warden raised his hand.

The figure of Clark tautened and strained at the straps as the current was turned on. Many winced perceptibly, glanced downwards, or closed their eyes. Several moved their lips, as if offering a silent prayer for this murderer's departing spirit.

The body in the electric-chair had almost immediately sagged to one side. There was some whispering and confusion at the switch-board; apparently something was not right. Someone in the audience whispered audibly, "This is simply terrible; it's an outrage to torture a person like that. They should examine those things beforehand."

After what seemed ages, all was again in readiness. The switch was closed once more. There was a slight sizzling sound and then the stifling smell of burnt insulation and scorched flesh sickeningly seeped into the close atmosphere of the closed room.

The figure of Clark lay limp in the electric-chair.

The legal executioner approached the warden and whispered to him. The warden then spoke to his chief deputy and beckoned in Dr. Foster's direction. As soon as they had disconnected the electrodes and unstrapped the victim, the physician hastily examined him. He found that the prisoner was alive but unconscious; he was burnt around the leg and neck and was very hot.

The warden was addressing the now excited assemblage: "Gentlemen. Something has evidently gone wrong with this electrocution as the fuses blew out twice. For the present it will have to be postponed until we can locate the trouble and remedy it. Take him to the hospital, George," he whispered to the doctor, "and see what you can do for him."

SO Dr. Foster spent the next hour in laboring to save the life of a man whom the State had so unsuccessfully

tried to exterminate. While he was dressing his burns one of his assistants took the patient's temperature.

"Gee whiz, it's up to the end of the clinical thermometer; I wonder how high it really is." Then this resourceful young man took the thermometer from the top of the sterilizer, and having first cautiously cooled it beneath the tap, placed it under the unconscious man's arm, German-fashion. "Holy mackerel; it's a hundred and twelve."

"It is," Dr. Foster exclaimed in amazement. "Why I never heard of such a thing. Let's get some ice-packs on him in a hurry."

As soon as he could leave his patient, the physician hastened to the Warden's office where he found the thwarted executioner closeted with his chief.

"How is he, George?" the latter anxiously inquired.

"He's pretty sick. Say you two had better go back to the hemp necktie and the trap-door. What was the trouble, Dennis?"

"Short-circuit," the electrician replied. "The first fuses popped like Fourth of July firecrackers. The second time I put in as big ones as the line would stand, but they blew out just the same."

"Did you find anything in his clothes, George?" the Warden asked.

"Not a thing," the doctor replied. "We searched his clothing very carefully, as soon as we received your instructions, but we found nothing."

"Do you think he'll pull through?"

"Of course he's had a slight shock," Dr. Foster facetiously remarked.

"Cut out the comedy George." The Warden was in no mood for jokes.

"It's a question whether he'll recover or not. He has the highest temperature I ever heard of in a human being. We have him packed in ice, but he's just burning up. I don't know whether he can stand the strain."

"What do you make of all this, George?" earnestly inquired the Warden.

"Well I must confess that I have some ideas on the subject, but I want to get a few facts first. I'll tell you more about it in the morning—I mean later this morning," Dr. Foster added, with a glance at his wrist-watch.

It was some time during the next afternoon before he was ready to see the warden.

"Look at these," he exclaimed, laying the X-Ray films on Bennett's desk. "I'd better interpret them for you, though. The gist of the matter is that Clark is as full of metal as a suit of armor. He has three plates on his left leg and hip, and four on his right. His skull is trepanned, and there's a beautiful metal plate just where the upper electrode rested. He's got more wire and metal inside of him than a clock; even his back-bone is hinged and wired. It's a most remarkable case of bone surgery. I bet a Scotchman, they're great surgeons, did that job,—he saved everything. Why, he's a regular lightning-rod; it's no wonder you nearly burnt up everything. You had your nerve, Bennett, trying to electrocute him. Come over to the hospital and take a look at him."

When they reached Dr. Foster's private office in the hospital building, they found the reporter Johnson seated there. "Hello, Chief," he greeted the Warden.

"Why, Foster, what does this mean?" the latter said. "You know it's strictly against the rules,—"

"Just a minute, Bennett," the doctor interrupted. "Let me handle this, please. Come on."

They all three entered the patient's room. It's a good thing that the warden hasn't a weak heart. His prisoner was sitting up in bed; he seemed very alert, his face wore a faint smile, and his eyes were bright and clear.

"How do you do, Doctor," he said in

a cultured voice. Then he recognized Johnson. "'Hello, Billy," he remarked, holding out both hands.

"Hello, Smiley," the newspaperman replied chokedly, grasping the proffered hands.

"It's a wonder that Bennett didn't collapse, so great was his amazement.

"This is Warden Bennett," Dr. Foster said simply.

"I am delighted to meet you, sir, even under these embarrassing circumstances, which the doctor was kind enough to explain to me."

"WILL you be kind enough to repeat to the Warden just what you told me?" the physician requested. "Certainly, sir," the patient pleasantly acquiesced. "My name is Rogers, although I understand I'm known here as Clark."

The Warden's face was a study.

"You see, sir," Rogers continued, turning somewhat weakly towards Bennett, "when I regained consciousness I was very confused. I had no idea who I was, where I was, or what had happened. The only thing that I definitely remembered was that my plane crashed just as I reached our lines, after a raid over the German trenches. That is the last thing that I can positively recollect. I do feel as if I dreamed some dreadful nightmares, but they are very vague. I remember no details of them, except something very hazy about doctors who hurt me terribly."

The Warden took Dr. Foster aside. "For Heaven's sake, George, explain this miracle to me. I can hardly believe my senses."

"It's really quite simple. Of course, when the fuses first blew I thought that Clark—Rogers, I mean—had some metal secreted on his person. We didn't find any, and yet I felt sure that only metal

could have caused such a short-circuit. Finally I decided to take some X-Ray pictures; you know what they showed.

"In his delirium the patient talked a lot about airplanes and several times he mentioned the name, Rogers. Then I got to thinking about what Johnson told us. Maybe you don't know it, but high-tension electrical treatment is often used for certain kinds of mental disorders. The electrical shock last night, while applied in rather novel style, completely restored his mind as you can see. It effected a perfect cure. It is a clear case of temporary mental derangement. Rogers was no more responsible for what

he did than you were. After a little rest, he'll be all right."

Bennett hurried to his office and called up the Governor, who granted Rogers a reprieve on the Warden's earnest recommendation. Shortly afterward he was fully pardoned, and given a new start in life which he certainly deserved. Johnson took charge of him and treated him like a long-lost brother. He even set him up in business. He is now chief tester for an airplane company, is happily married and has a couple of fine boys. He named his elder son after Johnson, and the baby after Warden Bennett.

THE END

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. What has the English language been called by a distinguished philologist? (See page 6.)
2. What is the meaning of the inscription 110 V—50 W, or the like, upon the top of an electric-light bulb? (See page 6.)
3. What was the origin of the word "volt"? (See page 6.)
4. Can you define electricity? (See pages 6 and 7.)
5. What metaphorical term used to be employed for the electric current? (See page 7.)
6. What error in terminology of the electric current prevailed up to recent times? (See page 7.)
7. What was the origin of the name for the unit of electric current? (See page 7.)
8. What two words, each with the initial letter "c", have to be distinguished from each other in electric expression? (See pages 7 and 8.)
9. What is the origin of the words "watt" and "kilowatt" and what do they mean? (See page 8.)
10. Give an illustration of why physical travel into the past is logically impossible. (See page 17.)
11. What is the theory of the formation of planets from rings of matter? (See page 17.)
12. Give a theory of the destruction of Atlantis. (See page 22.)
13. Describe the generation of lines, areas and solids from a point. (See page 48.)
14. Can you describe the imaginary four dimensional solid called the tesseract? (See page 50.)
15. Is there any possible suggestion that gravity is not a pull? (See page 86.)
16. Give some names of fungi. (See page 99.)
17. What are "roads that run," as metaphor entitles them to be called? (See page 111.)
18. What legend is there concerning the invention of the sun-dial? (See page 114.)
19. What invention is attributed by the author to Plato as a sort of myth? (See page 116.)
20. Is the mean noon, as shown by timepieces, the same as the solar noon? (See page 121.)

Into the Meteorite Orbit

By FRANK K. KELLY

This is a story of navigation into space, of plots and counter-efforts and of achievements in future television and distant communication, ending with a heroic sacrifice which brings the story to an impressive and inspiring end.

THE Cape Town liner dropped into the slips at Chicago's Municipal Rocket Port at five minutes after midnight. Circular slabs of stellite slid back silently; thin tongues of metal came out in narrow gang-planks that contacted automatically with the passenger's debarking tunnels. Below, under the ship's rounded belly, freight locks swung swiftly back with sudden clang of metal, and belched forth a rapid stream of cargo from the Dark Continent into the gravity loading chutes.

Passengers poured in long lines from the open door-ports of the liner, moving in steady flow through brilliantly-lit tubes into the debarking tunnels, and from them, coming out in a few minutes into the vast dome of the Central Way-Station. Here long rows of soft-cushioned seats were crowded with people, passengers of all ages, sexes, and descriptions, from all corners of the globe, waiting for the scarlet flash of neon light that would signal the arrival of an outgoing liner. A bell was ringing softly somewhere, in a flicker of deep sound. . . .

Across the floor sparks of green light flowed and flickered on a great luminous board, marking the rapid passage of stratosphere ships, high overhead. Switch operators sat half-crouched before banked televisé panels, shifting messages from speeding ships to ground stations and back again:

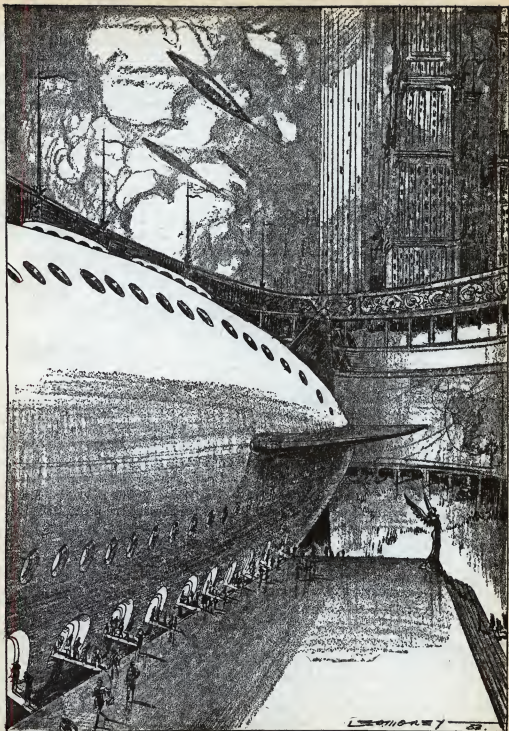
"STRATO-SHIP RX-V2 calling Chicago . . . Strato-Liner calling Chicago . . . RX-V2 calling Chicago. Commercial signals. Channel 1792. One-seven-nine-two. Message begins. . . ."

"Way Station, Central Berlin. Relay through on 4.33 wavelength. Check. Contacting all Transatlantic rotor ships. Weather bad in the southeast. . . ."

Men in the black-and-gold uniform of the Transport Combine moved quietly through the flowing crowds, some keeping systematic confusion from merging into chaos, others giving information to inquirers on ship-schedules, still others directing bewildered individuals in drab metal-cloth and the stencilled "Rural" on their name-tabs to seats in their correct debarkation sections; all in all adding a final touch of quiet efficiency to a scene of apparently shifting confusion.

A man, Girand by name, an engineer, came through the debarking tunnel for Section 678-NZ-Africa, and stood hesitantly for an instant at the edge of the vast crowded room. He glanced about him as though expecting someone. Disappointment crept in behind his gray eyes.

Another man shouldered a way through the crowd and stood before him. This other was tall, more than six feet, so that he towered above the slim height of Ron Girand like a bulky giant, for the engineer, in common with most of the people in the great hall, stood only a little over five feet. There was a curious



Passengers poured in long lines from the open door-ports of the liner, moving in steady flow through brilliantly lit tubes into the Debarking Tunnels.

restrained force about this man, a sense of leashed power and tensed unease, that was almost inhuman. His eyes were hard and glittering; his voice, when he addressed Girand respectfully, held a curious rasp of metal:

‘GOOD evening, M. Girand. I have the ‘copter waiting on Z roof, sir. If you will follow me—’

“Girand met his impassive, hooded eyes. The engineer spoke, half eagerly, half impatiently:

“Mr. Jimmy? He did not come?”

The other shook his great head in a slow negative gesture. The metallic eyes blinked.

“No, sir. Mister Jimmy is gone. He left soon after you, sir. Arizona, he told me to tell you.”

“I see,” Girand nodded, attempting without success to conceal his disappointment. He frowned; he did not at all see into it. It had been arranged that Jimmy was to meet him here on this date—without fail. Girand shrugged. After all, he told himself, he could expect no better treatment. This boy—man now—Jimmy Warren by name, with his unguessable wealth from Anton Warren’s moon properties, was his ward in name only; in reality he neither had, nor attempted to have, any control over young Warren’s actions. And Girand hadn’t hesitated to go off on a nine-months jaunt into Africa for some unknown purpose and unrevealed destination—without giving any explanation to Jimmy Warren. . . .

He wished suddenly that old Anton Warren were still alive. The father had seemed to possess a subtle knack of knowing how to handle Jimmy, headstrong and impulsive though he was. Girand shrugged: there was no helping it. His father was dead, worse luck, and he had been left with the duties of guardian—at thirty-five.

Not that he didn’t like Jimmy . . . He knew that his disappointment was strongly tinged with a desire for the easy comradeship the other had to offer—that, and something else. The game was getting too deep and intricate to continue playing a lone hand; and he’d counted on taking Jimmy into the conflict on returning from this trip. . . .

He shrugged, came out of his abstraction when Denn stepped on the starter, and began turning over the compact, efficient little sun-engines of the helicopter. He had been curiously silent all the way up from the way-station of Z roof, and said nothing even when Denn, the servant, had helped him in with his bags into the ‘copter’s rear cabin.

POWER fed into the ship’s six lift propellers from hidden photo-cell storage units. Through the glass roof of the cabin he could detect the spinning blur of the metal “props”, could catch the rising whine of the trembling engines. Then they were in the air, rising straight up from the light-jeweled darkness of the Chicago of A.D. 2163.

Denn spun a control-wheel, straightened out their air-course for Girand’s roof bungalow on the Victoria Hotel, whose hundred-story tower of beryllium-stellite lanced skyward in a blaze of light, a mile in the distance.

Girand leaned forward on sudden impulse and spoke, his mind busy with a comparison between this modern Minotaur and the growing cities of the South African vedlt, forgetting for an instant the true nature of the other:

“Denn, you should have been with me this trip. They’re doing things, those Africans. Some day the world’s going to hear from what it calls the Dark Continent—hear from it in a real way. Washington and London aren’t awake yet—but they will be . . . And Power!”

His voice caught, throbbing; came

again: "Power unthinkable—and undeveloped! . . . Enough to break the stranglehold the Monopoly's putting on the world. Those miles of sun-mirrors south of Capetown. . . ."

Suddenly he stopped, flushed deeply in the darkness of the little cabin, and cursed himself for a fool. Talking to this robot, this thing of delicately farbricated metal, a reasoning piece of animate machinery! As if it could understand. . . .

Denn spoke suddenly from the control-seat, his harsh voice rasping: "Yes, sir. We are landing now, sir. Hold on——"

Girand nodded, and caught a firm hold of the handle of his cushioned seat. The helicopter dropped straight down, motors humming, and struck softly against something smooth and hard. Denn cut the engines, leaped down from his seat, and came around to open the engineer's door.

Girand was already out. He gestured, and the other reached in and took his bags. Denn went on toward a door set into the smooth, metal wall of the roof bungalow, while Girand closed and locked the mechanism of the little 'copter. The engineer followed in a moment.

HE came into a great, comfortable living room with heavy furnishings arranged in a quiet manner that showed good taste backed by unlimited resources. The walls and long windows were panelled in the prevailing style of the day, with modernistic designs of black and white etched in the silvery metal. A great divan was placed before a wide, comfortable fire-place, and Denn had already lit a blaze in the atom-burner.

Girand went over and stood looking down into the quiet, steady atomic flame, which changed color softly as he watched. Green and scarlet and a queer roseate white leaped up against the smooth metal

of the grate and died down again while he stared, oblivious to the miracle of controlled utilization of the atom.

He shrugged, a little angry with himself. He should have been exultant, throbbing with the fullness of triumph, tasting the joy of his victory. . . But he was not. He was introspective, more than a little lonesome. His thoughts went back to Capetown, and South Africa. . . .

Raw country, down there. Raw, and new, and still bound by the pains of growth and youth—but with a foresight and a wisdom in its leaders that had not been given to the continents of Asia, America, and Europe. Himself, fighting the strength and resources of the Inter-Allied Power Monopoly. Fighting—and winning: Africa's power belonged to—Africa. A hard glow came in his eyes. . . . The African Power Development Corporation, controlled and regulated by the Governmental Council of United African States.

All of it, built up by him, Girand. No room in Africa for the out-reaching fingers of the Monopoly—as long as he lived. The Monopoly knew that. It had known it even before himself. . . .

He had won other victories—skirmishes. But this was first blood. The Monopoly was wounded, stricken—and angry. . . . As well as he did, the Group of Five realized that Power struck the keynote of this the 22nd Century. The twentieth had been the age of steel; the twenty-first, the era of transportation; and the twenty-second was fast developing into the power century. . . . Power meant control, and control meant the ruling of the world, not by its peoples, but by—the Group of Five.

If the Monopoly lived, Girand must die. . . . It had been so decided—and the Group had not been idle. They had tried often, with an untiring zeal; Girand knew that it was only a matter of time

—unless the battle ended in his victory. . . . That was why he wanted Jimmy behind him. There was an old saying he had read somewhere—"Carry on!" Jimmy could carry on. . . .

HE shrugged, and moved a little away from the fire. He had counted so much on finding Jimmy here, after the stark solitude of long nights in the veldt. He missed the constant activity that prevailed in these rooms during Jimmy Warren's brief occupancies of the bungalow.

There would be a party of some kind on now, if Jimmy had been here; flushed, bright-eyed couples locked in the motions of the newest modernistic dance, whirling in the center of the polished floor; Jimmy presiding gaily over the impromptu bar, serving bubbling synthetic concoctions with reckless abandon; someone else mounted on the great mahogany table against the wall, declaiming with intoxicated eloquence upon the evils of over-socialization and the increasing paternalism of the damned government . . . Where was Jimmy now, Girand wondered? Arizona, Denn had said.

Arizona! Bleak, white desert shining under a hard-gold sun . . . A yellow moon rising over the sharp ridges of gaunt mountains . . . Long miles of rolling ranchland, barren, forsaken, ruthless as primeval Nature. Arizona! . . .

Denn came in from Girand's bedroom, closing the door silently behind him. He bowed a little stiffly, and Girand thought he could detect a faint mocking glint in the metallic, hooded eyes . . . The hard voice came respectfully:

"Your room is ready now, sir. Pajamas on the bed. Sandwiches and coffee on the end-table. A new book sent you by the Communal Library, if you wish to read. And if there is anything else——"

"Nothing," Girand said, nodding dismissal. "Thanks, Denn. You can go now. I won't need you any more tonight . . . Wait a minute!"

"Yes, sir?"

"Any messages come here since the last group you forwarded to me? From Jimmy—or anyone else?"

The other hesitated. "I think not, sir. . . . But yes. There was one. I accepted it, recorded as usual. The reception disk is there, in the televisé cabinet."

Girand stiffened. "You know who sent the message?"

The hidden eyes flickered. "No. That was a strange thing. Visual connection was not given during the reception of the communication. Only audible."

"I see," Girand said, and smiled grimly. "The visa-screen was dark—clouded?"

The metallic glance met the engineer's. "It was, sir. Almost black, as if there was a broadcast interference."

Girand nodded. "That's all. You can go now."

"Yes, sir. Good-night, sir." The stiff-jointed, shadowy figure was gone. Girand relaxed, and lit a cigarette, staring again into the corruscating flames. . . . After a time he spoke, half aloud, as if there had been a long gap in his thoughts:

"Damn funny fellow, Denn . . . *Thing*, I suppose I mean. Hard to think of him as not human. He certainly comes mighty close to the real article . . . Warren was a genius! To create Denn. . . . I'll never see how he did it. Damn, but I wish Anton were still around somewhere to help me. . . ."

The thought made his eyes tighten. His fingers locked taut together. Anton Warren had fought the Monopoly, laughed when the Group asked for his records of the experiments that had created Denn . . . He had turned the plans over to the Pan-American Council—and died a month after. Girand always be-

lieved he had been murdered. . . .

The engineer jerked his shoulders. Impatiently, he flung the half-smoked tube into the fire, watched it dissolve instantly into bubbling points of disrupted light. . . . He walked into the bedroom, yawning, the television record-disk under his arm.

He glanced around at the door, nodded with satisfaction. Denn had been true to his word. Two sandwiches were arranged temptingly on a white plate on the little end-table, sitting beside a smoking cup of black coffee. A book with a gaudy, green jacket stamped CL-17 lay near the coffee cup. His pajamas were spread out neatly on the great bed. . . . Denn was very nearly human.

He slid the smooth cylinder of the recording disk into the opening of a translating machine, a square-shaped mechanism with a finely sensitive needle for bringing back recorded sound. Visual recording was possible by a combination of functions. . . .

Girand flicked over a switch. A soft purring sound came from the translator, shifted in a blur of static, and merged into the smooth voice of a man. Girand sat up straight; he recognized the voice. . . . One of the Five.

"THE Group extends congratulations, Girand. Once again you have—beaten us. This is the third time, I think. . . . Warnings, with a man like you, are futile and childish. The Group gives no warnings and makes no threats. But it is feared that you will soon die. Your death will not be quick nor crude, Girand. It may take a very long time. . . . We are sorry you have decided to allow Jimmy Warren to risk himself in your own foolhardy manner. Warren has been withdrawn from—the conflict between us. *The space between you will remain unchanged.* When you hear this message, the meaning of that will not be clear; but understanding is coming soon.

. . . You will remember that the Group gives no warnings and makes no threats."

The message ended. The name of the speaker was not given. It was unnecessary; Girand knew. . . . He sat silent a long time, thinking deeply. He had been told of his approaching death before, in messages almost exactly duplicating this one. . . . And yet there was a puzzle here, something too vague and formless for his mind to get hold off—and by the same token all the more menacing. "The space between you will remain unchanged. . . ." Queer, cryptical sentence, without apparent meaning. . . . And yet Girand knew that the Group did not deal in meaningless things. If Jimmy was in danger. . . .

He shrugged, and reached forward, turned the switch of the translator back to neutral, laid the small record-disk on the end-table. There was nothing he could do—until the time came. And when it came, he would know. . . .

Minutes later he was in the bed, luxuriating between the smooth white sheets, succumbing to a sudden overwhelming feeling of drowsiness and warmth. . . . So different, this, from long nights on the veldt, incased in an uncomfortable sleeping-bag under the stars, constantly tormented by hordes of vicious insects. . . . So much better, this; safer and better. . . . But if Jimmy was in danger—it was there again, digging at the corner of his brain, mingling uneasiness with queer uncertainty. He was very tired. . . . Body triumphed over mind. He dozed, forgetting the reading lamp above his head, the gaudy green volume on the little end-table. . . .

Then suddenly he was awake again, sitting straight upright in the great bed, his eyes puzzled, half-startled. He had heard nothing, seen nothing—yet he could have sworn someone had called him. A faint voice fingering softly deep within his brain, it was—calling.

It came again. Louder now, with an

undertone of sudden urgent insistence. And Jimmy was in trouble . . . This strange thing!

"RON GIRAND! Ron Girand! Do hear me? Answer me if I have made contact . . . Granton calling. Granton calling. Answer if you get this, Ron Girand! Ron Girand!—"

"I hear you," Girand said quietly, fighting down an instinctive feeling of panic at this uncanny thing. "What do you want? How are you able to speak to me this way? Who—"

"Girand! This is Granton; Dr. Richard Granton." The silent, inner voice throbbed strongly. "You remember? Anton Warren was my friend; he must have told you of me. We have never met, you and I; but we both know a friend . . . His name is Jimmy Warren."

"Jimmy!"

Girand's brain was rioting. But he remembered; there *had* been a Dr. Richard Granton of which Anton Warren had spoken often. A life-long friend of Warren's, who had gone to Arizona to delve into private researches of his own. Jimmy must have gone out there to see him. . . .

"JIMMY!" Girand exclaimed then. "Jimmy Warren! I remember you, Granton—but what's the meaning of this, man? What—"

"There is no time to explain it to you this way," the voice answered him coolly. "My mind is already growing weak. It is exhausting, this thought-contact, even with the aid of my transference mechanism. You've got to trust me, Girand, take my unsupported word for what I say. Jimmy's in trouble. We believe you're the only man who can help him. . . . I have tried, Girand, and failed. But together we might do something. Will you come where I direct you?"

Girand hesitated, his mind suspicious, seething with turmoil. Yet this other seemed honest, straightforward, frank.

And Jimmy was in trouble . . . This strange thing!

"What do you mean, man? How—"

"We're wasting precious time," the voice cut in immediately. "Answer me, and don't play the fool. Will you obey me, put your will under my control? I know what I'm asking; and believe me, it is absolutely necessary . . . For Jimmy. I swear it. Quick, Girand; what's your answer? Power is—getting low. . . ."

THE thought impulses were coming disconnectedly now, in short stabs of forced effort that brought sudden striking pain into Girand's temples. He made a quick decision.

"All right, Granton. I'm game . . . But if this is a hoax—"

"No hoax," the voice answered swiftly. "Get out of your bed. Hurry!"

Girand obeyed wonderingly.

"Step into the center of the carpet. Now hold your body very still. Keep your mind blank . . . Sleep."

Girand's eyes closed slowly, and his body relaxed, arms hanging limply at his sides. The room glowed then, was abruptly suffused with a roseate nimbus of whirling light that crystalized into a thickly luminous sphere about the motionless body of the engineer . . . The sphere darkened, thickened, spun feverishly on an invisible axis . . . And suddenly exploded, with a soundless concussion.

Denn, lying silently on his bed in the next room, staring out with sleepless eyes at the night sky, heard no sound.

But Ron Girand had gone.

CHAPTER II

The Man In the Moon

GRANTON opened a door cut into into the rock, and stepped out upon the floor of the Arizona desert. On all sides of him desolation,

barren and complete, stretched away to the far horizon. He yawned slowly, and glanced up along the steep side of the overhanging cliffs; the first dawnlight was just beginning to gild the edges of the hills.

The man behind him spoke, in a quick clipped voice. "Tired, Chief?"

Granton grinned. "Dead—from the neck up."

He yawned, and flexed tired muscles. His eyes were shadowed, reddened; he had spent sixteen hours of labor without rest in the cave laboratory behind the door in the rock. But his brain was not tired; something, sharp and vibrating within him, knew that he was close to the end of a long trail. And success would mean—something that he dared not think about. . . .

The man behind watched him, a queer look in narrowed eyes, head and shoulders shifted a little forward. A thin man this, with lean lips and a lean face, a tall well-knit body. Quick, agile, intelligent with a flashing brilliance that leaped, like a flame, to heights untouched by Granton's plodding genius . . . Barclay, Granton's assistant.

Granton jerked his strong head suddenly, startled, curious. A low humming quivered through the thin air over the desert; the shape of a fast-flying helicopter came into view, sharply etched in gold against the background of the rising sun. The little ship came on until it was directly above Granton's hills; then the engines died, and lifting blades fell off to half speed. The 'copter settled slowly down past the side of the cliff, struck the desert not twenty feet from where Granton stood.

For once his curiosity was stirred. He had chosen this spot from all others, because of its isolation and quiet; and it had proved ideal for the work he was doing. Interruption he did not want. But he was human, and just then a little

lonesome, tired of constant rubbing elbows with Barclay and Barclay alone. . . . He moved toward the little ship almost eagerly. Barclay followed with a kind of reluctance, a half frown gathering on his thin face.

THE door in the side of the ship's cabin opened abruptly, and a man's figure climbed down to the floor of the desert. Even at the distance, and despite the shapelessness of the flying clothes, Granton caught something familiar in the tall liteness of the other. Recognition came dimly, merged into certainty . . . Jimmy Warren!

Granton's heart-beat jumped; he quickened pace. The sun struck down on a mass of yellow hair and a square brown face; there could only be one head like that in the world—and it belonged to Jimmy Warren.

Granton came up panting, eyes eager, half incredulous at seeing the other here. "Jimmy! . . . You got my message?"

"I did that." The other laughed, the sound clear and keen in the desert air. Confidence and capability in that laugh, strong and alert. Jimmy Warren caught Granton's hand.

"In the name of seven devils, Granton, what ever possessed you to hide yourself away from the world in this place? Letting me hear from you once in five years! If Dad was alive——"

Granton grinned; and then, eyes darkening an instant: "I heard about Anton . . . I'm sorry, Jimmy. You're on your own, now."

"Not quite," he said a little queerly. "I've a guardian, you remember: Ron Girand . . . But he never bothers about what I do, so that doesn't cramp my style much."

"I see," Granton said, nodding. He swung, jerked a hand at Barclay, standing silently behind him. "My assistant,

Mark Barclay . . . Mark, Jimmy Warren."

"I've heard of you enough," Barclay smiled, and shook hands with the other; his face changed when he smiled, lips curling in a little twist, eyes lighting . . . Jimmy nodded and grinned.

"Sorry to know that. You'll probably have me cut out for a half-brained lounge lizard—if you listened to Granton!"

THE older man chuckled. "You always were a liar!" He turned, put an arm across Jimmy's shoulders. "Come up to my den . . . I can't promise you anything—but I have got a laboratory that's pretty much of a mess. And I suppose you're wondering why I sent for you?"

"I was, a little," Warren echoed, face suddenly sober; he turned from locking the cabin of the little ship. "That's why I've come out here to see you, really . . . I know what you're trying to do—and I've got to tell you about a few ideas of my own—afterwards."

Granton looked at him an instant in silence. "I see. Come along, then. We'll talk that over—later . . . Tell me all about yourself now. And Girand—how is he?"

They walked together up the rock slope that led to Granton's cave laboratory. He swung open the door cut into the cliff, and stood aside. Jimmy entered first, stopped a minute inside, eyes still a little dazzled from the sun-glare of the desert. Then he saw, and exclaimed softly, breath caught in his throat.

Granton put a hand on Barclay's shoulder, jerked his head. "Talk to you later, Mark . . . Come back in half an hour."

The other shrugged, nodded, and swung away, disappearing through a door at one side of the laboratory . . . Jimmy was standing silently on the metal

floor of a vast room, whose arched irregular roof lost itself somewhere in distant shadow and vagueness. Yet the place, however vast, was crowded, filled almost to capacity by unending rows of apparatus. Some of it he knew, and recognized: tubes and coils and banked condensers; but there was much of complexity and uses unguessable. A flame rose and fell in a great arched globe, fading and growing with a faint soft hissing sound. Hot sparks smashed in crackling crescendo across the gap of an electron power-circuit . . . Granton waved a careless hand, to indicate it all.

"MY laboratory," he said inadequately. "You like it?"

Jimmy swung and faced him. "Like it? . . . It's not in you to ask fool questions, Granton—but that comes close to being idiotic. I can't describe how I feel about it; but I think it's what I had a picture of in my mind . . . You're close to your—objective?"

Granton's eyes lit up with a sudden, intense fire. He nodded slowly. "Very close. That was why I sent for you. There's power here . . . I'm closer than ever I had expected to be. I've been working all night, with Barclay, on a model of the first generator. I know now my idea is right; all that remains is to prove it practical."

"I get it," Jimmy said, straight eyes upon him, lean body tense. "Anton told me you had a dream—and what you were doing to make it real . . . And you've done it now: made a dream real!"

Granton nodded quietly. You might call it that . . . I suppose we all have our dreams."

Warren's head lifted with sudden determination; the straight eyes met those of Granton. "You're right, Doctor. Even I have . . . Oh, I know—you've always believed I was shallow, foolish, imprac-

tical, a spoiled fool, with too much money to worry about having brains; but I've had my dream so long that it begins to get vague, fade in my mind . . . Should I fight to hold it?"

The other met the hard glance with serious eyes. "You should . . . Always."

"And if I told you what it was?"

"It would make no difference. If you believe with all your soul that you can make it real, if it's like a fire in you—carry on, no matter what I, or anyone else, might tell you."

Warren hesitated, eyes a little queer. Then, slowly:

"I've had it ever since—I saw the moon. My dream depends on yours . . . I want to go out into space—and reach the moon"

Granton stood an instant with the breath strangling in his throat; he caught the other's shoulders in a harsh grip. "Good God! Jimmy, I didn't mean what I said . . . I must have been insane, for a little. There are some dreams that are—follies."

The other stood straight and calm—hesitancy gone.

"**M**INE isn't . . . Because I'm going, some day. And you're going to make it possible, Dick . . . We're not always to be earth-bound, tied to a pebble for infinity! I can't believe that; something in me . . . If your motor can give power unthinkable—why can't I use it?"

He gave Granton, standing astounded, no chance to answer. "I'm going to! Oh, all my life I've thought about it, and planned—and dreamed . . . To be the first to go out across space! It would be worth living for! And why hasn't it been done? Because men have always been afraid; afraid to face the thought of going out into infinity alone! They've been contenders with their rocket-ships and their 'copters and their sun-motors;

content to stay earth-bound! Well, I'm not!"

Slowly the white heat of his intensity caught fire within Granton's soul, blazed up in flame. He must have been a little mad, to give in, to promise that when the motor was complete they would build a ship of space and go voyaging into infinity—but then he was a dreamer, and he had been alone, a long time.

"You win, Jimmy," Granton said, a little huskily. "When the generator is finished, and I'm satisfied with the power of it, and we've *proved* that power—why, we'll go out to the Moon together!"

Warren's face changed all at once, in a bright glow. He came close, held out a hand. "Anton was right! You're an ace! . . . When do we start?"

"Not for a long time yet," Granton laughed. "But we've made a beginning! Just now we'll shake hands on it. . . ."

And Jimmy crushed his fingers in sheer exultance. . . .

Behind them a door opened; Barclay came across the floor. "You're all in, Chief. You'd better get some rest . . . I'll fix Warren up with a room, while you get a little sleep. All right?"

"**Y**ES," Granton said. He hesitated . . . "I'll go now. But not before we've taken you in on this, Mark . . . How long have we been together?"

The other's eyes looked queer, as if startled. "Why—it's been four years. . . ."

"Long enough," Granton nodded. "Long enough to make me sure of you . . . Mark, Jimmy and I are working together—on the motor. And when it's done, we're going to build a ship. A space ship . . . That will take us out across space to the Moon."

Barclay's face stiffened, became impassive. "You'll let me in—I'll go with you?"

Granton made a slow motion of the head. "I hoped you'd say that . . . The answer is yes—if you want to go."

Barclay's voice came, clipped and straight. "I'm going."

And Jimmy and Granton shook hands on it again. . . .

So they built the Granton motor. Jimmy called it that, but Granton said that he and Barclay had as much to do with it as himself. It was a beautiful little thing, though, when Granton had finished; compact and efficient, and almost indestructible. The principle of it was simple: gravital radiation.

Granton had never been able to understand why gravitation had always been called a "pull;" every phenomena known concerning the force of gravity would fit as well into the framework of a repulsive theory. He had gone on that principle: that gravity is *not* a pull, but a pressure pervading all space. The Granton motor was attuned to the matter-radiations of the earth, and it was insulated against the influences of the other worlds of space. It acted as a super-transformer unit, infinitely sensitive in its receiving cells to the pressure of the earth; the result was tremendous propulsive power. In operation tests it proved to be nearly ninety-nine per cent efficient—as close to perfect as any man-built mechanism could come; harnessed to a space-ship, it would be just about the ideal thing for interplanetary travel.

And the ship was fast becoming a reality. The day arrived when Granton and Mark Barclay, who had taken over the duties of superintendent of construction on the little vessel, fitted the first full-power Granton generator into the hull. Jimmy had called the ship "The Anton Warren." It was a little beauty; long and slim and silvery, with the exhaust jets of the Granton force-streams built snugly into the rounded end of the

lean hull . . . Jimmy was half-mad about it.

THERE came that night the ship was finished. Jimmy and Granton were standing close beside the sleek hull of "The Anton Warren," very near a patch of shadow that the moonlight did not penetrate. The desert lay silent under the stars, stretching out before them.

The other was queer to-night, Granton thought; half troubled, and half exultant. He spoke, breaking a long silence:

"How well do you really know Barclay, Granton?"

"Barclay! . . . I don't understand what you mean," Granton said, his eyes disturbed. "He came to me four years ago. He's worked hard. He's been faithful. And he's a good scientist . . . I don't know what more I could ask."

Warren nodded. "I see . . . I like the man myself. He's brainy, even brilliant—keen on details . . . But I meant—before he came out here with you. What he'd been, what he'd done, what connections he had."

The older man shrugged. "I never asked. I didn't bother much about what he'd *been* . . . It's what he *was* that counted."

Warren was silent an instant. He was thinking, hesitant, uncertain of how to put his thoughts into words. And yet . . . Memory came back to him of the talk he'd had with Barclay that morning, out here near the ship. Barclay had been brusque, and cryptical, and sensitive—but he had gotten a meaning across . . . Barclay, brilliant, a research scientist in the first city of Arizona; the world of silent delving into forbidden things spread out before him—and temptation, temptation that led into a trap. Shady, crooked dealings. Stolen money . . . And caught. Threatened with exposure, with ruin. . . .

WHAT would Barclay have done if an offer had come to him from the Directory Board of the Arizona Power Corporation—and if the offer was a thinly veiled threat of what would happen if he refused? . . . The offer had come, with orders. He was to follow Granton to the desert; become the other's assistant; do nothing, say nothing, act the straight-forward research scientist he claimed to be? But to watch Granton, always—every move the older man made. And report, when the time came to act. . . .

Barclay had put the case to him that way, sketching it out with quick words and nervous gestures, but carefully keeping before Warren's mind the fact that it was *another* who stood in the dilemma. And Barclay had asked him what that other man should do—when the time came. Hold to his science and the faith of his friend—or yield to the command of those who had the power to destroy him by a refusal? Warren had given him a quick answer, brain rife with suspicion. . . .

"You're sure, then, Granton? You're confident that Barclay is all you think he is . . . You believe he's—honest with you?"

Granton frowned. "I wish you'd make yourself clear. Of course I believe in him!"

Warren looked up at him in the moonlight. "Then so do I . . . I'm on edge. Tomorrow—we're going out *there*. . . ."

He jerked a head toward the star-sprinkled blackness of the night sky, with a white moon riding high on the horizon. Thought of Barclay was gone from his mind, in a sudden sweep of exultance. He leaned forward, put a hand on Granton's shoulder.

"Granton—I'm going to-night!"

The other caught his arm, the breath dry in his throat. Granton said impatiently, angrily: "Don't be a fool!"

Warren was looking up again at the full moon, driving through a scattered wrack of clouds. "I can't wait, any longer! Why not—to-night? The ship is ready; and we were going in the morning . . . I can't ask you to go, Granton—you and Barclay; it's my game. You're too big; you're worth too much to the world. But somebody like me—that'd never be missed, if anything broke wrong—I *ought* to go . . . I can go; I will!"

GRANTON looked at him then with frozen intensity, their glances locked. "Get this: I'd ~~see~~ the ship wrecked first, before I'd let you go out there—alone. What kind of fool do you think I am? We'll go together—to-morrow . . . No! I'll take the ship up myself . . . To-night."

That startled him. "You wouldn't, Granton! . . . I'll wait, then, if you will. Until to-morrow—but no longer."

Granton believed him. The older man said with relief: "Of course. And we'll go together—to-morrow."

They moved off side by side, away from the ship, up the slope of rock leading to the door of Granton's laboratory. There were rooms on either side of the laboratory, caves carved out of the hills, furnished austere; Warren was staying in one near the door, and Barclay had that on the other side of Granton. Granton and Warren separated in the doorway, with one last look at the slim, silver beauty of the ship, cradled on steel trestlework rising out of the sand.

Granton went directly to his room. He was just beginning to doze, when he heard the scrape as the outside door opened, and caught the soft scuffling sound of someone's feet moving quietly along the corridor. He called out:

"Barclay?"

"Yes. Sorry I made the noise. I'd

hoped not to wake you up. You'll need your sleep—for to-morrow."

"Right," Granton said. "Good-night." He turned over in bed and went to sleep. Later, he was to remember that Barclay's voice had been hoarse and trembling. . . .

He did not sleep very long. It seemed to him that he had just gotten well into a doze again, when he felt a soft voice calling in his brain, fingering gently deep within his consciousness. He sat up sharply in the bed . . . It was Warren.

"GRANTON, are you awake? Can you hear me?"

Granton had a sharp foreboding of disaster. "Yes . . . What in the name of the seven veiled devils do you mean by using the telepath at this time of night?"

The answer struck him into paralyzed disbelief; but the words came crystal-clear in his brain:

"I'm using the telepath in the ship. Can you hear me? I'm at five thousand feet altitude, directly over you. Granton, the motor is perfect! Working like a charm! . . . You're a genius."

"Good God!" Granton cried, his tongue released from paralysis. "Jimmy! You're not serious?"

He was faintly amused. "Of course. I thought I'd let you know before I headed for the moon. I'm not even getting a thrill out of this; it's almost too easy! Granton, you don't know the feel of this ship! It's grand!"

Granton fought for self-control. The room whirled before him; Jimmy—out there, alone! "Jimmy, I'm begging you now, understand? . . . For God's sake come back before you run into something you can't handle! You're not dealing with theories now, you know; you're up against reality. God knows what's out—there!"

The other's answer came back, a little contemptuous. "I didn't know you were

a coward, Granton. Haven't you faith in the motor you built, the ship you created? I have! . . . I'm cutting off. The next you'll hear from me will be from—space!"

"NO, no!" Granton cried, struggling to hold contact, the sweat beading over his forehead. "My God, Jimmy!"

But there was silence in his brain. The other had gone . . . Granton was left alone, filled with a queer sort of empty panic, and a feeling that something unguessable impended. . . .

He went at once and got Barclay. The two of them hurried into the laboratory together, to try and get in touch with Warren through the giant telepath-transmitter.

Granton was too upset to pay much attention to Barclay, though he did notice that the other was queerly pale; there was a muscle jerking nervously in a corner of the thin mouth . . . Barclay could not face the older man, but kept his glance on the floor, or flickering over the apparatus in the room. His eyes swung from the tele-transmitter along the room to the vibra-screen and back again, incessantly. But Granton believed it was fear for Warren, increased by his friendship for the other to the point of frenzy.

Then while Granton was frantically adjusting the distance dials of the transmitter, fitting the telepath-helmet on his head, Barclay spoke hoarsely, voice trembling:

"It's my fault, Granton. My fault. Good God, I must have been insane! . . . I listened to you two to-night, when you were talking about taking the ship up. I went into the engine room after you left, and jammed the second circuit of condenser coils . . . The generator is going to break down somewhere out in space—and Warren in the ship! . . . Granton, Warren was right. I got in

wrong, before I came to you. I sold you out—for a price. . . .”

“You mean,” Granton asked with an unnatural coolness, “You’ve been taking orders from the Group? They want—the motor?”

Barclay dropped his glance. “I mean that . . . God knows, I’m a fool! I reported yesterday the ship was finished; they gave me orders to hold you off another day . . . After that—it wouldn’t be necessary. They’d have the motor.”

“They’re coming here?”

“They’re here now. In the desert. They’ve got a fleet of helicopters, and flash paralysis guns . . . They were planning to take the laboratory to-morrow—before the sun. . . .”

The clipped voice broke. “I was a damned louse! Selling you out, and the motor, because I was afraid . . . God!”

A RAGE rose within Granton slowly, freezing the sudden hatred at the back of his brain. He could have killed Barclay where he stood, but something about the man was so wretched and broken, that the lust to murder went out of him, and he was simply contemptuous.

“I won’t tell you what I think of you, Mark. There aren’t words for it in the language.”

The other nodded, all the life and confidence gone out of his eyes. “I know. You’re right. But anything you might call me wouldn’t come near to what I think of myself. I’ve sweat blood, thinking about that ship out there in space . . . If you’ll just let me *do* something, anything that might pull him through! I might help, some way.”

Granton believed he was sincere, suddenly. After all, the other was a *scientist*—and that was something that meant more than fear of death . . . Granton nodded in a curt motion.

“All right. First, we’ve got to handle the Group . . . You thought about the

beam shields—put them out of hook-up?”

“No!” Barclay said in sudden exultance. “No! I’d forgotten, completely . . . We can hold the Group off—until we reach Warren. I’ll get the shields up. . . .”

Granton caught his shoulder for an instant in a crushing grip. And spoke grimly:

“**S**EE that you *do*.”

Barclay nodded speechlessly, swung to the banked control-panel that held within it the interleading conduits of electric force that created fan-beams of crackling force-shields. His fingers played rapidly over gleaming studs, building up voltage and charged power, blanketing in the hill of the laboratory with a silent, shimmering screen of electric energy. He grunted in sudden satisfaction, set a quick glance along steadying dials . . . “Set, Chief. They’ll sweat some, breaking through that!”

Granton shot the board a swift look, nodded, swung on the other. “Get over here and shut up. We’ve got a chance of reaching Warren before it’s too late.”

They worked in a kind of frozen silence, each of them thinking of the man in the little silvery ship, speeding unconsciously toward an unguessable doom—to be an occupant of a new satellite, a human being in an eternal tomb, endlessly circling . . . Or to fall back in a long screaming slant to the hard breast of earth. Granton cursed the other inwardly to relieve pent-up feelings, but outwardly the two of them were that many machines, working with frantic fingers to build up contact with the ship.

They got it. Faint, it was, and flickering and uncertain—but contact. Granton called Jimmy’s name softly, and he came into their field of vision, appearing as a shadowy, half materialized

wraith standing there in the center of the energized screen.

Granton spoke rapidly, quietly, but with a solemn steadiness that drove home the earnest reality of what he said. He urged, concluding a brief summary of what Barclay had confessed:

"Get it straight, Jimmy . . . You've got to turn back at once. If you do, you have a chance. If not—well, we'll try to save you, but it will be long odds, that's all."

The other's face paled, and all the conscious stubbornness faded out of his eyes. Granton realized then the inner boyishness of the other, taking everything he wanted as his just right . . . But he was a little afraid, now.

"I'M turning back, Granton."

He vanished for an instant, and the two taut men in the laboratory could visualize him working frantically at the ship's controls, swinging the little vessel about in a wide circle to bring it back to earth.

Then he was before them again, eyes dulled with sudden despair. "I can't turn back, Granton! The controls are jammed somehow! I can't move them!"

His face was dead-white, subtly pleading with Granton to find for him a way out of this queer trap into which his own willfulness had plunged him. Granton was in agony.

"My God! Jimmy—try it again. Jam against them hard; they might work this time. . . ."

The other nodded, suddenly calm, self-controlled again. He vanished . . . Barclay spoke, voice harsh with horror:

"Granton, couldn't we materialize him? We've tried it before; and we've got the transmitter. . . ."

Granton nodded, hope coming back behind his eyes. It looked possible. The other had already been half materialized.

Matter was vibration; what could be simpler than to dematerialize him, bring him back through space to the laboratory, and reintegrate the atoms of his body?

Warren came back into their field of vision, eyes hopeless. "It won't work, Granton. The controls are jammed; I can't move them."

"Never mind," Granton said, forcing cheerfulness into his voice. "Barclay's suggested using this transmitter to bring you back to the laboratory. We'll have to cut off for a while, and make some changes in the coil set-up; you'll be all right till then, of course. You're not in immediate danger, you know. And the ship—we supplied it for several months, Jimmy."

He nodded slowly, resignation in his face. "I see . . . Then it may be months before you can reach me. I'll wait, of course—the view is grand! I've got a front seat for the biggest show of infinity!"

Granton laughed, forcing his mirth. "You have that! And it won't be months either, Jimmy. A few hours, that's all . . . I'll cut off now; every minute saved will get you out of this that much quicker."

"I'LL be waiting," the other said, a faint smile at the corner of his lips . . . Granton and Barclay went to work, then; they changed the coil set up and condenser arrangement of the transmitter a dozen times, and tried sending experimental animals from one end of the laboratory to the other, and return. They succeeded, hours later. They had done it before; but never with a human as subject. . . .

Granton got connection with Warren again, and tried it. He failed, time and again. The transmitter was helpless outside the atmosphere of the earth, apparently; they could see and hear the other plainly enough, but beyond that they

could not go. Always it was the same; the ship swinging endlessly in a long orbit, between the earth and moon—and Warren waiting, hope dying within him. . . .

Then he thought of Girand. Granton was working wearily at the transmitter, forcing tired fingers to move.

"Granton! If you could get Ron Girand——"

"Girand?" the older man echoed, a little puzzled; then: "I see. Your guardian. Where is he?"

THE hope rising in Warren's face faded away. "No—you couldn't reach him. He's in South Africa somewhere . . . Wait! How long has it been since I came there?"

Granton considered. "Seven months."

Warren spoke slowly, hesitantly. "Granton—do you think, with men from Tucson and Barclay to help, you could build another ship in two months? Girand will be back in Chicago, before then. You could get him; he would come, I know."

Granton nodded decisively. His eyes lightened, met Barclay's. "The only way out—and you thought of it! Barclay—you and I are going to work!"

Barclay's eyes were on the control-panel of the beam shields. Dials quivered and jerked under the impact of a sudden flow of counter-acting power . . . "Have you forgotten—the Group? They're here . . . We couldn't get through to Tucson or anywhere else. Build another ship like that one in two months? It can't be done!"

Granton's face was grim as steel. He glanced once all around the clicking rhythm of the great laboratory. "It can. We've got the material—and the power, power that can't be tapped from the outside. We can set up beam protection on the desert here . . . Barclay, it's *going* to be done!"

CHAPTER III

Into Space

RON GIRAND came out of hypnotic sleep with a startled jerk, and lifted bewildered eyes. He met the straight, grave glance of another man, a man in a close-fitting laboratory smock that came down over the knees of his thin body, covered his whole form from his square chin and unruly shock of dark grey hair to the rubber tops of his heavy boots. Girand opened his mouth to speak felt a sudden subtle tingling in his bare feet, and looked down. He gaped amazed.

He stood, still in the pajamas he had worn in the prosaic safety of his Chicago bedroom, upon a circular plate of smooth, hard metal, flanked on either side by the banked tubes and massed dials of some strange apparatus, his position directly under the steady glare of a great blue-flaming dome light. Amazement struck him again, and overwhelming curiosity. He stared again at the man in the acid-spotted smock, his eyes taking in the curious costume, half that of the confined sedentary scientist, half that of an outdoor huntsman.

"Where am I?" Girand demanded at last, after a moment of mutual appraisal. "What's this mean? You told me Jimmy——"

"I DID," the man answered in a grave, pleasant voice, extending a firm hand. His eyes looked unutterably tired, as if he had been driving himself incessantly for a very long time. "I told you he was in trouble, and I wasn't lying, Girand. He is in danger. Serious danger. And we've got to get him out of it—quickly . . . Step down here, and put these on."

He was holding forward a small pile of clothes; Girand obeyed, and found himself standing on the cool metal floor

of a huge room, whose distant roof lost itself in shadowy vagueness high above. The room was crowded, filled almost to capacity by endless rows of apparatus of complexity and uses unguessable. Granton nodded.

"My laboratory," he said simply. "I suppose you're wondering how you got here. That plate from which you just stepped is the receiving instrument of my vibra-transmitter; I've just finished re-integrating the matter of your body. The beam into which you walked in your bedroom simply reduced your body to vibration which it carried on a returning wave-channel to the plate here . . . And you came."

Girand shook his head slowly. "I may never understand that part of it, Granton, but I know it works. That's mostly what I'm interested in. Engineering happens to be my line. I don't pretend to know much about anything else."

"Good idea, that," Granton said amusedly, his face relaxing a little. "And now you want to know why I brought you here."

"I do," Girand said, his eyes mirroring his itching curiosity. "That's all that counts . . . Where's Jimmy?"

The other's face sobered. He gestured toward the long barrel of a telescope that reached up through the roof of the room, turned toward it. Girand followed.

"THIS will tell you better than anything I could say . . . Use this eye-piece."

Girand looked into the tube, and caught a breathless vision of intense black space, dusted with the brilliance of uncounted stars. Nearer and larger than any other body in the interstellar vastness was the huge face of the moon, scarred and pitted with dark craters . . . And in between, a tiny sliver of light, coming nearer. Girand watched, the

breath caught in his throat. He saw it plainly, before it began to grow smaller again: A ship out there in space!

He turned slowly, eyes incredulous. "Jimmy—is there?"

Granton nodded. "Yes . . . In that ship. I built it. He came two months ago with a dream in his brain: of reaching the moon. I suppose I was weak, insane, to give in, but there was a fire in him, Girand, that—well, I helped build that ship and the generator that took it off the earth. We got a few technicians from Tucson to help on construction, and Mark Barclay—that's my assistant—superintended the building of the hull . . . Barclay sold out to Power . . . You've heard of the Five?"

"Heard of it!" Girand said bitterly. "My God, yes! . . . Now I know what they meant when . . . *The space between you will remain unchanged!* They knew that Jimmy was—out there. Go on, Granton."

"Barclay tampered with the motor, set it so that it would break down, he thought, before the ship could be taken off the ground . . . But it didn't. It held, till mid-space—and then gave out . . . The night the ship was finished Jimmy took it and headed into space. There isn't much more. And what there is—it's plain enough."

"Yes," Girand said slowly, "I think so. The ship is caught out there, by the forces of the moon and the earth, endlessly circling, a new satellite. Jimmy—out there alone among the worlds of space! Good God, it's unbelievable!"

"But it's true," Granton said softly.

Girand swung on him with a sudden terrible swiftness. "What are we going to do, man? We've got to save him! We've got to!"

"WILL you listen to me?" Granton asked, almost impatiently. "We're under siege here—have been for

months. We're holding out, by using beam shields. The Group hasn't brought up enough power *yet* to—break through. But it's a matter of time. You and Barclay have got to go—quickly. We've built another ship, Mark and I . . . I've forgiven Barclay for what he's done these last weeks. If ever a man worked like a slave—but it makes no difference to you. You see, he feels as if he's been a traitor to something bigger than you or me or the Five—his science. He's trying to make up for it . . . Girand, are you willing to go out into space to save him?"

The engineer said simply, face grim and taut: "I'd go to hell and back. Jimmy counts a little with me . . . But I've got something to settle with—the Group."

Granton looked at him for a long time in silence. "Jimmy believed you'd come through. He said something about what you were doing with power . . . When you come back, Girand—you are coming back—we'll fight together."

The other stared a little queerly. "What do you mean?"

Granton smiled, meeting his eyes. "I think you know . . . The ship is ready."

The engineer did not hesitate. He extended his hand abruptly. "You're on, Granton . . . Where is it?"

Granton shook his hand in silence. Then:

"Follow me."

They went out through a door in the rock, side by side. Granton gestured toward the slim bulk of a silvery football of metal, resting snugly in the trestlework of a debarking-cradle. A vague and shimmering brightness hung above it, in a curving shield: the electric beam-screen, athrob with pulsing power.

"THAT'S the ship."

The red light of the rising sun crept along smooth, curved sides, gleaming soft crimson. Girand sucked in his

breath with a soft sound: "My God!" It was that beautiful.

A man was standing silently beside the open air-lock in the side of the little vessel, his eyes on the slowly lightening sky. His face was deeply carved with lines of weariness . . . Girand nodded to him, looked at Granton:

"Barclay?"

"Yes . . . Barclay. He's going with you."

They came up together. The man by the airlock hesitated an instant and held out his hand, something humble in the gesture. "My name is Barclay, Girand."

The engineer stood silent an instant, fighting himself. An urge of fierce anger, of contempt, of anger that would shrivel the humility of the man, and contempt that would destroy him, mingled in hate . . . But he shook hands, and nodded:

"I know. . . ."

Barclay shot him a silent, grateful glance. Granton moved a little away from them both, and spoke, softly. He was glancing at his watch. He nodded suddenly, and stepped back from the ship.

"You haven't got very much time. He may need you—now. And the Group won't wait forever. They're trying to break through now . . . Come back with him, Girand. You understand me?"

Girand smiled grimly. As if this other had to tell him that!"

"I do."

Granton shot him a long, hard glance, then nodded. "You'd better go, now. . . ."

The other two nodded. Girand stepped through the opening of the airlock, and vanished; Barclay followed, moved the mechanism that closed the double doors . . . They swung shut, fitted snugly into place.

A HUMMING sound throbbed through the thin desert air. Granton stood very still, watching. There was no display of unleashed power; but the ship

rose slowly from the grip of the landing cradle, climbed upward through the reddening sky. . . .

In the distance dark shadows stirred, and the purring roar of armored heli-ships came across the sand. A scarlet fleet of ships struck upward, motors throbbing, beam projectors sparkling angry streaks of yellow light . . . The Group had begun to fight.

The speed of the silvery football changed, merged into a silent slip of soundless force, driving hard through the thin veil of the earth's air. Power, quivering and unseen, answering the challenge of the red squadron . . . Spinning lift blades fought the fading droop of thinning atmosphere; motors failed and choked, yielding to the frozen rigor of the edge of space. Futile saffron beams stabbed out like angry fingers—but the silver ship climbed onward, vanished. . . .

As so many baffled hawks, the red 'coppers resigned the chase, dropped straight down in screaming flight upon the banked shimmering glow of Granton's beam-shields. Yellow beams and purple flared and flashed in counter-action on the glimmering screens; flickered and faded, swung away . . . The fleet came about, motors humming, and slid low across the desert beyond Granton's hills—was gone.

Granton, crouched before the clicking panel of the beam control-board, straightened suddenly, eyes on the vision pictured in the glow of the receptor visaplate. He looked up and laughed. . . .

* * * * *

The ship moved upward through the atmosphere with an effortless ease, the Granton generator humming a steady song of power. Girand sat by a port-hole, looking down at the world falling away beneath them.

The horizon climbed, and curled upward, and the earth looked concave, distant. They went higher, and convexity

came, to round out into a great sphere, cloud-girt, with the Pacific very blue in the far distance. Then they were out of the atmosphere and the whole globe spread out before them, with the continents like etched figures in a small wood-puzzle . . . Barclay sat like an automaton before the simple control-board, his eyes unwavering from his instruments.

Except once—when the televisive screen glimmered to the bright scarlet of the raiding ships, and flashed and flickered under the yellow stab of ion rays . . . Then Barclay turned pale about the lips, and drove home the plunger of a master-stud. The ship quivered, shot upward faster, left the red fleet far behind. . . .

"THE Group?" Girand asked calmly, almost as if the matter held no great importance . . . It seemed insignificant and small, out here. Barclay nodded.

"The fleet's been holding us in the laboratory since—just before Warren left. And now we've slipped out between their fingers . . . The Group will foam."

"I hope so," Girand grinned, and turned away . . . Thought of that faded in a quick exultance from his mind. He felt a thrill rising in his soul. They had dared to go out into space, in this little bubble of steel—man was no longer earth-bound! The thought set his heart to pounding. . . .

The feeling passed, and loneliness came in its place, as the ship shot on into infinity, the sky intensely black before them, with the stars like diamond-dust scattered with a cosmic hand. And the moon a monstrous world blotting out half the universe, hiding the orange flame of the distant sun. . . .

Girand got up, and moved cautiously about the ship, found the locker holding the two space-suits, of which both would

have to be used. They could take no chances on losing Jimmy; it would be a game of life and death at best, bringing him across space to this ship.

Barclay stiffened suddenly, and cried out: "Here she comes—'The Anton Warren!' Girand—look!"

Girand came behind him quickly, and stared through the glassite plate above the control-panel. The tiny sliver of silver light was growing, expanding before them, until they were hurtling through space side by side, circling in an endless orbit, each ship no more than a hundred feet from the other.

Barclay locked the controls and rose, face set. He looked at Girand. "We're in a meteor belt here, Girand. God help us if we get in the way of one of the things!"

GIRAND shook his head. "We'll hope for the best, that's all. And Jimmy is out there—waiting for us. That counts."

"Yes," the other agreed, "Of course . . . Let's go."

They helped each other into the clumsy space-suits, with their rocket attachments along the sides and back. Air-tight helmets came down, fitted snugly into the neck-segments of the metal fabric. Girand and Barclay stared at each other, caught a vision of ungainly monsters in armor.

Girand led the way to the lock; he was familiar with the mechanism. It was very similar to the emergency ports of the stratosphere lines of earth . . . The inner panel slid open, and the two men went in together. The panel closed; and the outer slab swung inward.

The engineer and Barclay went out head foremost into space, with a little rush of air from the lock. Girand, an instant later, felt a sensation of unutterable giddiness, watching the universe whirl around him; and then he was him-

self again. He applied the power to his rocket attachments gingerly, felt himself jerk, watched the other ship draw appreciably nearer. Barclay was moving on the other side of him.

The smooth sides of "The Anton Warren" loomed up before them. Girand's throat was dry; only a little longer, and Jimmy would be with them. . . .

BARCLAY opened the airlock, and went through. Girand moved alongside, waiting . . . The other's head and shoulders appeared, with the armored form of Warren in his arms. Barclay's body swung, and Jimmy moved across space, struck against Girand; the engineer caught him hard, looked through the helmet.

He caught a jerk of surprise through the glassite plating; Jimmy's voice came through the radiophone:

"Girand! You here! You know—I'd almost begun to think you weren't coming!"

"You knew better than that," Girand said quietly, fighting a queer tightness in his throat. "I came—and I'm here!"

"When you two get through there, I'd like to remind you we haven't got all day," Barclay's voice came abruptly. "Let's get going, Girand. I don't like the thought of those meteorites."

"Right," Girand said. "Come over on the other side; Jimmy's suit hasn't rocket attachments. We'll take him together."

Coming," Barclay answered. He moved in close, caught Warren's right arm. Girand took the other. They applied power slowly, swung away from the derelict "Anton Warren," came nearer to their ship.

Girand's heart tightened suddenly, the breath caught in his throat; the power was dying, choking off in his suit! He dropped back slowly, inexorably, felt himself pulling against Warren's arm.

With sudden decision he let go, spoke quickly:

"Barclay! The power's going in my suit—it's gone! How's yours?"

The other hesitated. When he answered, his voice was queer: "All O. K. . . . you say yours is *all* gone? You can't move?"

Girand gestured helplessly. "No. There's nothing left . . . You'll have to keep us all going."

He was falling back steadily. Already a gap had opened between his body and the other two.

"GOOD God!" Barclay's voice was taut with horror. "Look there, Girand! Coming at us!"

They all three saw it: a meteorite, a jagged chunk of rock and iron, whirling endlessly through space—and now on an orbit even with the three in armor, hurtling toward them! Barclay applied power in a sudden burst; the engineer, frozen, saw lines of flame leap from the rocket-jets of the other's suit.

"Girand, get away! Try, man, for God's sake! We can't save you! If I turn back now it'll get us all!"

But the engineer knew and Warren knew, that that was a lie. There was time yet—if Barclay willed it so . . . But if he was afraid—

Warren spoke frantically, struggling against Barclay's grip: "Let me go, you yellow scum! I'll stay with him . . . Let go!"

Barclay's voice came, taut and strained: "All right! . . . Yellow! You think—I'm afraid . . . I'm coming, Girand!"

He hurled the other from him suddenly; Warren's body shot across space, struck the edge of the airlock in the side of the ship. Then Barclay turned, came down in a swift slant to where Girand struggled helplessly, staring with dazed eyes at the oncoming meteor.

Barclay struck the engineer like a thunderbolt, rocket-jets standing out in long plumes of flame behind him; Girand's body turned over twice, hurtling through space, shot past the edge of the jagged mass of oncoming rock. The shock of the collision halted Barclay's headlong flight, flung him off at a tangent—squarely into the path of the ragged bulk of iron and stone. . . .

WARREN cried out, and turned his eyes away; Girand watched, unable to move, his body flattened against the outer panel of the airlock . . . It was over quickly. He turned, a little sickened.

"He was right, Girand!" Warren choked hoarsely. "He couldn't have saved us all—and I thought he was leaving you because—"

"So did I," Girand said, still dazed. "But he saved us both . . . At the cost of himself . . . It was a quick death."

"Yes," Warren whispered, eyes staring into space, "I believe he wanted it that way. . . ."

Girand fumbled at the outside controls of the airlock, felt the panel opening under him; he caught Warren by the arms and drew the other after his body, into the ship . . . The outer panel closed behind them.

Girand gestured toward the control-board. "Can you handle this ship, Jimmy? if not—"

The other did not hesitate. He shrugged out of the ungainly space suit. "But I can. It's a duplicate of the other . . . We'll go back now, Girand."

The engineer nodded. "Yes. Back . . . Granton will be waiting."

A little later a silver line of light swung round in a long oval near the moon, straightened out, and sped down through nothingness toward the beckoning earth. A ship of space was going home.

A Vision of Venus

By OTIS ADELBERT KLINE

This is a very nice story, verging on the short, short order, and will be enjoyed by all of our readers. We have not had a story by Mr. Kline for some time and we are sure this one will be welcome. There is a love motif, but not of an order to excite opposition from our readers.

Illustrated by MOREY

DR. MORGAN, scientist and psychologist, stared fixedly into the crystal globe before him, as he sat in the study of his strange mountain observatory.

For many years, he had been communicating with people on Mars and Venus by means of telepathy, and recording these communications.

Just now, he had established *rapport* with Lotan, a young plant hunter for the Imperial Government of Olba, the only nation on Venus which had aircraft. He was seeing with Lotan's eyes, hearing with his ears, precisely as if this earthly scientist were Lotan the Olban. The electrodes of his audiophoto thought recorder were clamped to his temples, and every thought, every sense impression of Lotan's was, for the time, Dr. Morgan's.

Lotan's little one-man flier was behaving badly. He had just come through a terrific storm in which he had lost his bearings. His navigating instruments were out of commission and his power mechanism was growing weaker. It would be necessary for him to land and make repairs, soon.

For many months he had sought the *kadkor*, that rare and valuable food fungus which had once been cultivated in Olba, but had been wiped out by a para-

site. His sovereign had offered him the purple of nobility and a thousand *kantols* of land, if he would but bring him as many *kadkor* spores as would cover his thumb nail. But so far his quest had been fruitless.

Far below him the Ropok Ocean stretched its blue-green waters for miles in all directions—a vast expanse of sea and sky that teemed with life of a thousand varieties. There were creatures of striking fantastic beauty and of terrifying ugliness. A number of large, white birds, with red-tipped wings and long, sharply curved beaks, skimmed the water in search of food. Hideous flying reptiles, some with wing-spreads of more than sixty feet, soared quite near the flier, eyeing it curiously as if half minded to attack. They would scan the water until they saw such quarry as suited them, then, folding their webbed wings and dropping head first with terrific speed, would plunge beneath the waves, to emerge with their struggling prey and leisurely flap away.

The sea itself was even more crowded with life. And mightiest of all its creatures was the great *ordzook*, so immense that it could easily crush a large battleship with a single crunch of its huge jaws.

But these sights were no novelty to



Like an avenging arrow, the tiny craft hurtled after the flying monster.

Lotan, the botanist. What he hoped to see, and that quickly, was land. Failing in this, he knew by the way the power mechanism was acting, that he would soon be compelled to settle to the surface of the Ropok probably to be devoured, ship and all, by some fearful marine monster.

Presently he caught sight of a tiny islet, and toward this he directed his limping ship with all the force of his will. For his little craft, which looked much like a small metal duck boat with a glass globe over the cockpit, was raised, lowered, or moved in any direction by a mechanism which amplified the power of telekinesis, that mysterious force emanating from the subjective mind, which enables earthly mediums to levitate ponderable objects without physical contact. It had no wings, rudder, propeller or gas chambers, and its only flying equipment, other than this remarkable mechanism, were two fore-and-aft safety parachutes, which would lower it gently in case the telekinetic power failed.

Normally the little craft could travel at a speed of five hundred miles an hour in the upper atmosphere, but now it glided very slowly, and moreover was settling toward the water alarmingly. Lotan exerted every iota of his mind power, and barely made the sloping, sandy beach when the mechanism failed altogether.

As he sprang out of his little craft, Lotan's first care was for his power-mechanism. Fortunately the splicing of a wire which had snapped repaired the damage.

HE looked about him. At his feet the sea was casting up bits of wreckage. It was evident that a ship had gone to pieces on the reef—the work of the recent storm. The body of a drowned sailor came in on a comber. But it did not reach the shore, for a huge pair of jaws emerged from the water, snapped, and it was gone. In the brief interval

he recognized the naval uniform of Tyrhana, the most powerful maritime nation of Venus.

Then his attention was attracted by something else—tracks, freshly made, leading from a large piece of wreckage across the soft sand and into the riotous tangle of vegetation that clothed the interior. They were small—undoubtedly the tracks of a woman or boy.

Lotan followed, resolved to try to rescue this marooned bellow-being, before taking off.

He plunged into a jungle that would have appeared grotesque to earthly eyes. The primitive plants of Venus, which bear no fruits, flowers nor seeds, but reproduce solely by subdivision, spores or spawn, assume many strange and unusual forms and colors. Pushing through a fringe of jointed, reed-like growths that rattled like skeletons as he passed, he entered a dense fern-forest. Immense tree-ferns with rough trunks and palm-like leaf crowns, some of which were more than seventy feet in height, towered above many bushy varieties that were gigantic compared to the largest ferns of earthly jungles. Climbing ferns hung everywhere, like lianas. Creeping ferns made bright green patches on the ground. And dwarf, low-growing kinds barely raised their fronds above the violet-colored moss which carpeted the forest floor.

The trail was plain enough, as the little feet had sunk deeply into the moss and leaf-mould. It led over a fern-clothed rise to lower marshy ground, where fungus growths predominated. There were colossal toadstools, some of which reared their heads more than fifty feet above ground, tremendous morels like titanic spear heads projecting from the earth, squat puff-balls that burst when touched, scattering clouds of tiny black spores, and grotesque funguses shaped like candelabra, corkscrews, organ pipes, stars, fluted funnels and upraised human hands.

But Lotan gave no heed to these. To him they were quite commonplace.

AS he hurried along the trail, there suddenly came from the tangle ahead a horrible peal of demoniacal laughter. It was quickly echoed by a dozen others coming from various points in the fungoid forest. He dashed forward, gripping his weapons, for he recognized the cry of the *hahoe*, that terrible carnivore of the Venerian jungles. It had discovered a victim and was summoning its fellows.

Like all Venerian gentlemen, Lotan wore a tork and scarbo belted to his waist. The tork was a rapid-fire weapon about two feet long, of blued steel. It was shaped much like a carpenter's level, and fired by means of explosive gas, discharging needle-like glass projectiles filled with a potent poison that would instantly paralyze man or beast. The scarbo was a cutting, thrusting weapon with a blade like that of a scimitar and basket hilt.

As he abruptly emerged into a little clearing, he saw a slender, golden-haired girl who wore the silver and purple of nobility, clinging to the cap of a tall fungus. Below her, snarling, snapping and leaping upward, were a half dozen *hahoes*, huge brutes somewhat like hyenas, but twice as large as any hyena that ever walked the earth, and far more hideous. They had no hair, but were covered with rough scales of a black color, and mottled with spots of golden orange. Each beast had three horns, one projecting from either temple and one standing out between the eyes. Two of them were gnawing at the stem of the fungus, and had made such headway that it seemed likely to topple at any moment.

With a reassuring shout to the frightened girl, Lotan whipped out his scarbo, and elevating the muzzle of his tork, pressed the firing button. Horrid death-

yells from the *hahoes* followed the spitting of the tork, as the deadly glass projectiles did their work. In less than a minute four of the brutes lay dead at the foot of the fungus, and the other two had fled.

But during that time, brief as it was, another flesh-eater of Venus, far more fearful than the *hahoes*, had seen the girl and marked her for its prey.

As Lotan looked upward, about to speak to the girl, she screamed in deadly terror, for a man-eating *gnarsh* had suddenly swooped downward from the clouds. Seizing her in its huge talons, it flapped swiftly away.

Lotan raised his tork, then lowered it with a cry of despair. For even though he might succeed in killing the flying monster without striking the girl, a fall from that dizzy height would mean sure death for her.

There was the bare possibility, however, that the *gnarsh* would not eat her until it reached its eyrie, which would be situated on some inaccessible mountain crag. As there were no mountains on the island, the monster would probably head for the mainland, and he could follow in his flier.

He accordingly turned, and dashed back to where his airship lay. Leaping into the cabin, he slammed the door. The little craft shot swiftly upward to a height of more than two thousand feet. Already the *gnarsh* was more than a mile away, flapping swiftly westward with its victim dangling limply.

LIKE an avenging arrow, the tiny craft hurtled after the flying monster. As he came up behind it, Lotan drew his scarbo, and opening the cabin door, leaned out.

Almost before the *gnarsh* knew of his presence, the botanist had flung an arm around the girl's slender waist. With two deft slashes of his keen blade, he cut

the tendons that controlled the mighty talons. They relaxed, and with a choking cry of relief, he dragged her into the cabin. Turning his craft, he aimed his tork and sent a stream of deadly projectiles into the flying monster. Its membranous wings crumpled, and it fell into the sea.

Unconscious of what he was doing, the plant-hunter kept his arm around the girl's waist—held her close. He slammed the door, and turning, looked into her eyes. In them he read gratitude—and something more that thrilled him immeasurably. With that brief look went the heart of Lotan. He was drawing her nearer, crushing her to him, unresisting, while the ship hurtled forward, when he remembered that she was of the nobility, and he only a botanist. The jewels that glittered on her garments would have ransomed a *rogo**. And he was a poor man. He released her.

"You are of Tyrhana?" he asked.

"I am Mirim, daughter of Zand, Romojak† of the Fleets of Tyrhana," she replied. "And you, my brave rescuer?"

"Lotan, plant hunter for His Imperial Majesty, Zinlo of Olba," he replied. "My navigating instruments are out of commission, but when we strike the shore line, which we are sure to do by proceeding westward, I can find the way to Tyrhana and take you home."

"HOME," she said, and there was a sob in her voice. "I have no home, now. My mother died when I was born. My father went down with his ship in the great storm that cast me on that terrible island. Now I return to the loneliness of a great castle filled with slaves." Burying her face in her hands, she burst into tears.

His arm encircled her grief-shaken body, and his hand stroked her soft, golden hair.

"Mirim, I—" he began, then stopped resolutely. The gulf between them was too great. Now if he had but found the *kadkor* and won the reward, he would be her equal—could ask her hand in marriage. He gasped, as that which had been in the back of his mind, endeavoring to fight its way into his objective consciousness, suddenly occurred to him. He had seen the *kadkor*. It had been a *kadkor* that Mirim had climbed to escape from the *hahoos*. But in the excitement of the moment his mind had only registered the fact subjectively. Back there on that tiny islet, now several hundred *kants* away, was the object of his quest. But he did not know its bearings, and had not even a compass to guide him. He might search a lifetime and not find that islet again.

Presently the girl ceased her sobbing, sat up and began to adjust her disheveled garments. She detached her belt pouch and handed it to him.

"Will you empty this for me, please?" she asked. "It came open and got filled with some horrid gray spores."

Lotan looked at the spores, and his heart gave a great leap of joy, for they were the spores of the *kadkor*, scraped from the gills of the fungus by her open belt pouch as the girl had been dragged aloft.

"I'll keep these, if you don't mind," he said, "for to me they are worth the purple, and a thousand kantols of land. Moreover, they give me the courage to say that which has lain in my heart since first I looked into your eyes. I love you, Mirim. Will you be my wife?"

"Take me, Lotan," was all she said, but her lips against his told him all.

* King.

† Admiral.

Island of Science

By B. S. KEIRSTEAD

This story, by a professor in the Canadian University of New Brunswick, brings us face to face with a ghost-writer, who is to write the biography of one of the principal characters of the narration. This is a very imaginative story and brings in the old familiar legend of King Alfred, of Saxon, England, burning the cakes. The picture of King Alfred, face to face with the modern personality, is certainly very well done. The conclusion of the story has the real short, short story touch.

Illustrated by MOREY

I AM really quite sane, although you may not think it when you have finished reading the tale of these adventures. Yes, quite sane, and I insist I am not a liar. You will remember Falstaff says "is not the truth, the truth?"—and with a like confidence I propose to set down a plain, unvarnished tale of my adventures, hoping that the same clear stamp of truth will carry its own conviction to the most doubting mind.

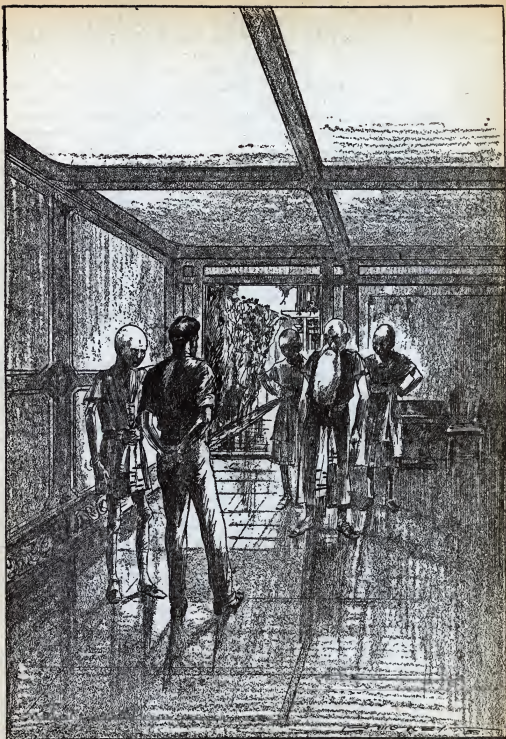
One ought not to speak ill of the dead, but it is necessary to introduce Patrick Farrell to the reader, and it is impossible to describe him without speaking ill. He believed in SERVICE and PROGRESS and the ESTABLISHED ORDER OF THINGS and was impossibly rich. He was the chief owner and managing director for GARGILITIS, Limited, and he manufactured enough mouthwash to cure the hoof and mouth disease of all America. Whenever he saw one of his advertisements, "Do not offend! Use Gargilitis," his face assumed a perfectly satisfied expression, and he would murmur with a reverential air: "Five million bottles every week. That's SERVICE"—It was! Patrick liked to be seen with Gordon, because he said "Culture was a great service, too"—and as

Gordon was a writer who had been well-reviewed in Patrick's favorite hogwash journal, he was classed under the flattering generic "CULTURE." And since he couldn't have Gordon about without having me, he had to put up with me, although I was never "CULTURE."

Patrick invited Gordon to accompany him on a yachting trip around the Carnatic. The object was clear. He wanted Gordon to write his life; of course it was always referred to as "The Life." Gordon agreed, after Patrick had bid such a ridiculous figure that any man would sell his artistic soul for it, and he also stipulated that I must be brought along as a species of comic relief.

The voyage out was exceedingly dull for me. The "Firefly," it is true, was luxuriously equipped, and I was never bothered by Patrick who divided his time equally between sleeping and long talks with Gordon, in the course of which he delivered himself of such tiresome anecdotes and stupid opinions as were to form the main body of "The Life." I talked a good deal of blasphemy to Gordon and slept and watched the sea and was exceedingly bored.

When we were rounding the southern point of the Carnatic Peninsula we ran



The tallest of the three men replied. Of them all, he alone was not clean shaven. A patriarchal white beard cascaded to his bosom.

into a serious storm. For several days we were blown south, far off our course and far from the traveled lanes of ships. Our wireless mast was down and our communication with the world was severed. The great seas towered above us in a threatening fashion, accumulated as they hung over us and thundered down upon us with a force which seemed as though it must burst the decks. We were leaking and strained and the monsoon did not abate its violence. The fourth night of the storm—we were running before it like a scurrying leaf—was one of a sort of mad terror. Dinner had been served by a white-faced steward, but we had been forced to eat standing. The skipper had come down for a hurried cup of steaming coffee. His face gleamed in the wet light. Salt, like a harlot's powder, crusted his face, cracking where the tired lines delineated the rough surfaces. He did not speak to us except to say that we had better keep below decks. Gordon and Patrick obeyed him and I left them pacing in a pitching, drunken manner up and down the length of the saloon.

On deck, wrapped in oilskins, I made my way up to the bows. An indistinct figure passed me, as I clung for a moment to the companion-way stanchion.

"Is that you, Mr. Lucas?" he shouted.

It was our second officer, a youngster, very keen.

"We're making very heavy going," I said.

"We shall be all right, so long as we have a clear sea before us," he replied. "Have you seen the cat?"

"No."

"The men are very worried about her. We are much afraid she's gone overboard."

"That's too bad," I said.

"Yes. There are rats in the fore-castle."

I WENT on forward. I could not stand in the bows proper, as I had hoped to do because the seas were sweeping over the nose of the ship in a deluge that would surely have thrown me down and carried me off. But I could see, under the low, scudding clouds, the great seas take form, as they hurried down from the low horizon. Cleft by the bow the lesser waters would break aside foaming grey with a sort of rage. But the big waves came over us whole and broke solid upon the ship, so that it was with ever recurrent wonder that one saw the decks emerge again, with the foaming water rushing out of the scuppers.

There was a perfectly relentless rhythm that hypnotized me as I watched until I had lost all sense of movement. The roaring of the wind became just a constant, solid pressure on my eardrums; the sea and the clouds stood still, like some mad panorama out of Asgard, for surely none but strange, wild gods could live there. The whole universe stood still—I swayed in an ecstasy to the insane sensation.

CHAPTER II

WHEN I recovered consciousness I heard the murmur of subdued voices about me. I opened my eyes tentatively, and it hurt. I could see nothing but I was conscious of a blinding flash of light. Then a voice, speaking in a rather stilted, academic manner, said in English, "Will you have the goodness to drink this."

I had no choice. I drank.

I must have slept almost at once. When I opened my eyes again I felt quite recovered. I did not struggle to my feet, I sprang to them. I looked about me, amazed. The night and the day had passed during my two periods of unconsciousness and it was evening. The

storm had ceased and the setting sun showed the western seas running in great regular swells.

Withdrawing my gaze from the sea I studied my more immediate surroundings. I had been lying on a knoll overlooking an island which could not have been in area more than five square miles. Down by the sea, directly below me, was a cluster of very neat and very simple, frame houses. Behind me the island was covered with a rich, natural vegetation. Overhead wild birds chattered. Otherwise I was alone. I shuddered and walked down towards the houses. I was amazed to feel no pain, but rather a sense of physical exhilaration I had not known since my boyhood before the War.

The houses were arranged in squares, adorned with greens and gardens set out in beautifully arranged sets of flowers. The surface of the squares was of hard yellow clay. In the central square I was met by a man with a most gigantic head and lofty brow. His body was small, but neat and compact. His age one could not guess. Over his brown skin was hung a garment of thin, smooth, white cloth, very like silk. He spoke to me at once,

"I trust that you find yourself restored in health," he said.

"Yes, thank you," I replied. "Would you tell me where I am?"

"I do not know that I can do that," he said, frowning. "You will have to see Pukha; he is our President."

He led me into one of the houses. It was unadorned and furnished with straight wooden chairs and tables. The illumination was of an indescribable nature. It was as clear and bright as electric lighting, but ever so much softer and more restful to the eyes. Nor was its source evident. The whole room radiated with this charming light, but there was no bulb, or lamp, or anything of the nature to be seen.

Three men rose as we entered. They

bowed to me and, in perfect English, bade me welcome and wished me well. To the best of my ability I returned their courtesy.

"This gentleman has expressed a desire to know where he is," my guide said.

The tallest of the three men replied. Of them all, he alone was not clean shaven. A patriarchal white beard cascaded to his bosom. When he spoke I recognized his voice as one that I had heard when I first recovered consciousness.

"**A**T an early hour yesterday morning, to be exact, just after midnight, the yacht "*Firefly*" on which you were a passenger was wrecked on the outer bar or reef of this island. So fierce was the force with which she struck, that she went immediately to pieces and all were lost. But you who had been thrown clear over the reef by the impact fell into quiet waters and though you were unconscious we were able to bring you ashore and to revive you."

"The others?" I asked.

"They are all gone."

There were a few moments of silence. Then I asked, "May I inquire where I am and to whom I owe my rescue?"

He looked strangely upon me. "There are some things better unknown. Knowledge is a dangerous thing."

"I have never been afraid to know," I said.

He studied my face curiously. "No," he said, "I don't believe you would be." He looked to the others. "Is he worthy of learning our secret?" he asked.

The three men indicated by nods that they would like to discuss the matter and I was asked to step out of the room. I withdrew to a piazza overlooking an Italian garden and, in the farther distance, the sea. There was a distinct coolness in the air which was intensified as

the shadows deepened. A white clad person came to me and offered me a stoup of aromatic and warming wine. Since he did not address me I made no attempt to engage him in conversation.

I shuddered with the first sip of the wine. There was a strangeness in the quality of the refreshment as in the whole air and countenance of this island. The men—I had seen no women—were obviously Aryans and, as far as I could judge, Italic. They spoke perfect, if somewhat archaic, English. There were no appearances of natives. These white men seemed the only inhabitants of the island.

I was distressed to discover that I had no cigarettes. I grew rather nervous from reaction, curiosity, and the inactivity of waiting. I wondered if they would decide that I could not be trusted with their secret. There even occurred to me the alarming thought that they might kill me, rather than risk my chancing upon this "secret," whatever it could be.

Then I was called back to the pleasantly lighted room.

The President, Pukha, bowed and addressed me. "Your name is——?" he asked.

"Lucas," I replied.

"Mr. Lucas, we have decided that you may know the true story of this island. There is no reason why you should not know other than that, if you were too small a man, a man of too little imagination, you would become a scoffer. And we cannot have a scoffer living among us. What we do require is an implicit faith." He paused. My interest and curiosity were worked up to an intolerable pitch. "Please go on," I said.

"There is no need to ask you for a promise never to repeat what you are about to learn because, if you ever do repeat it, no one will believe you."

There was a solemn nodding of heads. I wondered if they were all mad.

"YOU are on the INSULA SCIENTIAE. Many, many generations ago we came here, the great scientists of the world. In those countries, which are familiar to you, and which are called civilized, science was trammled and obstructed by governments and religions, by emotions and prejudices and, most particularly, by the distracting effect of women on individual scientists. So we came to this sexless, religionless, ungoverned island, and here the pure reason, unfettered, has carried us far along the road humanity has yet to travel."

"Oh," I said, "and how do you support life?"

He laughed. "We shall tell you everything," he said. "Ten minutes of every day we devote to the production of foods in our nourishment laboratories. We have very few deaths, for we replace organs as they wear out. There are no women on the island, of course, but we keep several children here. We create them artificially as we need them, and although we allow the most intelligent to grow to manhood, we use the organs of the majority to replace our own as they become worn out. We have many here who were alive, as you reckon time, in 1600."

"But," I objected, "if you have no traffic with the outside world, how do you know so much about it, and, for that matter, how do you come to speak English. You are not an Englishman, are you?"

"No," he replied. "I was born in Florence in 1492. I was the president of the original scientific society that came out here. I have been president ever since.

"As to our knowledge of the external world, I shall easily make that clear to you. Though it is true that the out-

side world, from which you come, has no conscious traffic with us, we have traffic with it. We revisit it at any space-time point we choose. You yourselves, have, I believe at last hit upon the relatively principle which governs the physical spatio-temporal order. It is really very simple. We discovered it several centuries ago and have spent efforts in working out many interesting corollaries. One will be of particular interest to you. We have invented a machine that enables us to travel in any direction much faster than light. We can increase the speed, in fact, to infinity or decrease it to the inverse of infinity. We can control this machine from this island, sending it to any space-time point in the universe and bringing it back. This machine, which we call a 'carpet', will convey the body of one man, who travels in a trance, from which he emerges when the machine comes to rest. In this way, by traveling faster than light we have, for example, been able to be present when Rome was burning and I have, myself actually listened to Nero's fiddling. Or by traveling at an inverse speed we can reach Washington when the first Frankenstein president is being installed over the Technocracy."

"And you speak all languages?" I asked.

"Naturally. I have for example visited England on five occasions, and spent enough time there to speak the language fluently. I went once during the reign of Alfred, again during the Wars of the Roses, later to meet Newton, again to Cambridge but a few years ago, and then last month I paid a short visit to the Court of Queen Elizabeth."

"MR. PUKHA," I said, "you are the most colossal and stupendous liar I have ever met."

He was angry. "Ha!" he exclaimed. "We shall yet convince you."

At a gesture I was seized by the three men and hurried out into the night. They took me to a stretch of hard, golden sand by the sea. Implanted in the sand were long metal runners that gleamed under the stars. I was thrown to the ground. My hands and feet were fastened to a thin sheet of some peculiar metal. It curved around my body in a cylindrical fashion.

Pukha then approached me.

"We shall allow you to choose where you would like to go," he said genially.

I replied wildly, "I should like to see King Alfred burn the cakes."

"Very well," he said. "Now follow my directions carefully. We shall give you a drug which will induce a state of coma. We shall also plug your nose and ears. These precautions are necessary to preserve your life in transit. When you arrive push this small button here. That will release your hands and feet. Then remove the plugs. You will have exactly one hour. When that time has elapsed fasten yourself to the carpet, replace the plugs and swallow this drug. On no account permit yourself to be separated from the carpet."

"Upon my word——" I was beginning.

"One final admonition," said Pukha. "Have you a weapon?" I nodded. There was an automatic pistol in my pocket. "You are permitted to use it, if it is necessary to save your life. But be very careful not to do anything that might change the course of history, because if you do, it creates the greatest confusion for the historians."

I nodded. I could see that.

Pukha then gave some very detailed and mystifying directions to men standing in the background. Dials were turned and Pukha inspected the machinery. I was given a pill which I swallowed. My ears and nose were stuffed. I lost consciousness.

CHAPTER III

I CAME to myself in bright sunlight. Great trees were all about me. But despite the strangeness of this forest scene, there was some quality in the sunlight which made me realize almost at once that I was in England. I tried, but failed, to sit upright. I could not breathe and was strangling. My hands and feet seemed bound by iron. Dazed and frightened as I was, it was almost a full, rather agonizing minute, before I recalled my last conscious sensations and Pukha's instructions. With a groping movement I felt along the metal sheet which encloaked me. My fingers encountered a button, which I pressed. This freed my hands and feet. I pulled the stuff from my nose and ears.

A long grateful breath! And with it the smell of something burning, not that delicious smell of smoke that hangs heavy on the spring air, but an irritating smell, reminiscent of a bad day in the kitchen. I looked about me and saw, a few paces behind me, a small thatched cottage. I hastened to it and entered.

In the one great room, with its rush and mud floor, sat a man, head buried in his hands; he was clad in a fashion which recalled to me illustrations in my school history books. At the noise of my entrance he looked up. I recognized him—the Great Alfred—with scarcely a momentary sensation of awe. As Eric Linklater says, the movies have taken all the surprises out of foreign travel.

He glanced with a startled face at my habit, and reached for a short, ugly sword that lay on the table beside him.

"What, in God's name are you?" he asked in Anglo-Saxon.

I was glad that I had read ancient English at Oxford, where Anglo-Saxon is required by the philologists.

I stayed him with a gesture. "Never mind that for the moment, Sire!" I ex-

claimed. "The cakes, don't forget the cakes!"

He swore a great oath that will not translate and ran to the stone oven, which stood with the spit in one corner of the room. In a moment he returned, carrying in his hand a baking pan from which issued a cloud of smoke. He looked hard at it.

"A BIT brown," he said, "but not really burned. Look."

I did. He was quite right. The cakes were singed in spots, but they were not ruined. They were quite edible and, as a matter of fact, we sampled them. I think I should put the historians straight on this much debated point. Some say Alfred let the cakes burn. Others claim that this is all nonsense, that he took the cakes off at just the right moment. The truth is, as I have stated, the cakes were browned a thought too much, but were quite edible and ought not to be held against him. In fact some people would prefer them that way. It is really rather splitting hairs to blame Alfred for what may very well have been a slight eccentricity of taste. Though frankly I am afraid it was carelessness, for if I had not appeared when I did, the cakes would have been burned to a "frazzle."

This thought pulled me up short. I had been told not to interfere with the course of history and I had, in the very beginning, failed to obey my instructions. I was terribly upset by this thought and said so.

"I'm frightfully sorry about that, Alfred," I said—of course I ought not to have called him Alfred, but after reading so many history books it just slipped out—"I oughtn't to have interfered."

"But, my dear fellow," he replied, champing a brown biscuit, "if you hadn't interfered, as you call it, the blasted cakes would have been ruined. You spoke just in time. I'm most awfully in-

debted." His noble countenance, which had been creased with lines of worry when I had first seen him, was now lit by a most gracious smile. "Old Dame Thanelagh would have boxed my ears for me if I'd let her cakes burn."

"Exactly," I said. "That is what she is supposed to have done."

"What!" he exclaimed. He looked at me somewhat suspiciously. "What a queer chap you are and what queer clothes you wear. Where do you come from?"

"I live in Berkshire," I replied truthfully, "quite near Pangborne."

"Ah, he said. "Can you tell me, have the Danes crossed the river?"

I tried to recall my history. After all, I was familiar with this period. I should be able to tell him. But of course, I realized, I can not tell that, because I do not know what date it is now.

"If you will tell me the day of the month and the year," I said, "I can, perhaps, answer your question."

"The what!" he said, "are you mad?"

I HAVE already assured the reader on this point, and I gave the same assurance to King Alfred. He received my statement with an ancient courtesy and told me the date. I was then in a position to assure him that the Danes were across the river and were moving southwest.

"That's all right, then," Alfred said. "We'll trounce the beggars yet." I told him that we should indeed.

"You seem an honest fool," he said, regarding me speculatively. "Could you be trusted to carry out an important mission?"

I looked at my watch. Forty minutes of my hour were gone.

"Sire," I said, "you have no more faithful subject and no more devoted follower than myself. Whatever I can do

for you in twenty minutes count as done."

"Twenty minutes," he said, displeased. "And is that all you have to offer me, you who are of my own shire and people."

The great King looked sadly about the forest swamps of Athelney. In his face one could see written the history of what had been and what was to be. There was the lofty brow and the mellow lines of scholarship and travel, and there were the sympathy and full, humane knowledge of the temperate noble life. There, too, were the lines of him who had suffered for his people, learned the sad, stubborn ungraciousness of humanity without bitterness; and there, too, was the future history of the race—lines of courage and decision, that, to me, spelled the great victories of Edington and Chip-ingham and that wise temperance in victory covenanted at Wedmore; there were great, proud ships in every sea, wise laws and usages of freedom—

"My lord," I said, "I am at your command."

"I know you now," he replied. "In twenty minutes you must go. Let us say no more."

I bowed and he gave me his hand. Then I returned to my carpet.

As I reached it I heard a cry from behind me. I turned. A great brute of a man was rushing upon the unarmed Alfred, brandishing a sword.

I knew perfectly well that Alfred was not supposed to have been assassinated, so I felt that I was not really interfering with history. I drew my revolver and shot the murderer as he charged upon the King.

"Stout fella," Alfred said. He looked approvingly at my gun. "That's a neat little gadget you have there."

I nodded. I should like to have given it to him, but I knew I couldn't, for it was four centuries yet before they were

allowed to have firearms. I turned the conversation.

"Who was this wretch?" I asked.

"He was called Canute."

"Canute! Good God! Born a hundred years too soon!"

Alfred stared strangely upon me. My hour was up. In terror I rushed to fasten myself to the carpet. "Got to see a man about a dog," I explained, but Alfred did not seem to understand me. I do not think that he regretted my departure.

I swallowed my pill and fastened my feet and hands. My last conscious thought was, "it must have been another Canute."

* * * * *

The next thing I knew my eyes were opening on a sub-tropical night sky. There was the murmur of the sea in my ears and in my nostrils the scent of strange flowers.

Pukha was bending over me, his great beard sweeping my breast.

"Have a nice visit?" he said.

THE END

REDWOODS. By Stanton A. Coblenz. *Los Angeles: Overland-Outwest Publications. \$1.50.*

Stanton A. Coblenz is one of the best known and best liked of the contributors to *AMAZING STORIES*. This book of poems is best reviewed by our publishing the very charming picture of the great forests of California, and their long experiences of the geologic changes of our earth. We are glad to bring this book by a lover of the true California—the California of Muir, the great nature lover, not of Hollywood, world of the film. Mr. Coblenz is quite devoted to the rather difficult form of verse—the heroic sonnet:

Before the coastal mountains were upthrown
Out of the red maw of the sulphurous night,
The stern Sequoias roofed a birdless height
Peopled by pterodactyl wings alone.
They knew the dragon-lizards, and have known
The lizard's passing, and the blaring might
Of saber-tooth and mammoth, and the flight
Of tribes entombed in Cenozoic stone.

Now in their green old age, the forest door
Yields to the latest seedling of life's tree—
A two-legged creature, crawling midget-small.
And shall it chance these clustering towers will
soar

When he too passes, and the woods shall be
Still Titan-domed while races flower and fall?



The Watch's Soul

By JULES VERNE

Some centuries ago the clock makers of Europe won fame by the wonderful clocks which they constructed. When the hour was to be struck, various little figures would march in procession, perhaps, across the face of the clock. And going still further, some clocks would show the movements of the constellations of the zodiac. The famous clock in the Cathedral of Strasbourg is an example of what they did in those old days and the guide books always call attention to remarkable clocks in various cities. At the present time, in this mechanistic age, the personal factor as far as the manufacture of a clock is concerned has pretty well disappeared. In this idyllic story, we are brought into the workshop of an old-time clock maker.

CHAPTER I

A Winter's Night

THE city of Geneva is situated at the western extremity of the lake to which it The Rhone, which crosses gives—or owes—its name. the city on emerging from the lake, divides it into two distinct quarters, and is itself divided, in the center of the city, by an island rising between its two banks. This topographical situation is often to be observed in the great centers of commerce or industry. Doubtless the earliest inhabitants were seduced by the facilities of transportation afforded by the rapid arms of the rivers,—“those roads which advance of themselves,” as Pascal says. In the case of the Rhone, they are roads which run. At the period when new and regular buildings had not as yet been erected on this island, anchored like a Dutch galiot in the midst of the river, the wonderful mass of houses huddled the one against the other offered to the eye a confusion full of charms. The small extent of the island had forced some of these buildings to perch upon piles, fastened pell-mell in the strong cur-

rents of the Rhone. These big timbers, blackened by time and worn by the waters, looked like the claws of an immense crab, and produced a fantastic effect. Some yellowed nets, real spiders' webs stretched amid these venerable substructures, shivered and trembled in the shade as if they had been the foliage of these old oaks, and the river, engulfing itself in the midst of this forest of piles, foamed with melancholy groans.

One of the habitations on the island struck the observer by its strange appearance of extreme age. It was the residence of the old clockmaker, Master Zacharius, his daughter Gerande, Aubert Thun, his apprentice, and his old servant, Scholastique.

What an original personage was this Zacharius! His age seemed incalculable. The oldest inhabitants of Geneva could not have told how long his lean head had wavered on his shoulders, nor the first day on which he had been seen walking along the streets of the town, his long white locks floating waywardly in the wind. This man did not live. He oscillated after the manner of the pendulums of his clocks. His features, dry and cadaverous, affected somber tints. Like the pictures of Leonardi di Vinci, he

had put black in the foreground.

Gerande occupied the best room in the old house; whence, through a narrow window, her gaze rested sadly upon the snowy summits of the Jura. But the bedroom and shop of the old man were in a sort of cellar, situated on a level with the river; the flooring rested on the piles themselves. From an immemorial period Master Zacharius had not been known to emerge thence, except at meal-time, and when he went forth to regulate the different clocks of the city. He passed the rest of the time at a bench covered with numerous clockmaking instruments, which, for the most part, he had himself invented.

For he was a man of talent. His works were very popular throughout France and Germany. The most industrious workmen in Geneva freely admitted his superiority, and that he was an honor to the city. They pointed him out, saying, "To him is due the glory of having invented the escapement!"

Indeed, it is from this invention, which the labors of Zacharius will later make clear, that is to be dated the birth of the real science of clockmaking.

ONE winter's evening old Scholastique was serving supper, in which, according to ancient usage, she was aided by the young apprentice. Though carefully prepared dishes were offered to Master Zacharius in fine blue-and-white porcelain, he ate nothing. He scarcely replied to the soft questionings of Gerande, who was visibly affected by the gloomy silence of her father; and the garrulousness of Scholastique herself only struck his ear like the grumblings of the river, to which he no longer paid attention. After this silent repast the old clockmaker left the table without embracing his daughter, nor did he, as usual, bid the rest "good-evening." He disappeared through the narrow door

which conducted to his retreat, and the staircase fairly creaked under his heavy tread.

Gerande, Aubert, and Scholastique remained silent for some moments. The weather was gloomy; the clouds dragged themselves heavily along the Alps, and threatened to dissolve in rain; the severe temperature of Switzerland filled the soul with melancholy, while the midland winds prowled among the hills and whistled drearily.

"Do you know, my dear demoiselle," said Scholastique at last, "that our master has kept wholly to himself for some days? Holy Virgin! I see he has not been hungry, for his words have remained in his stomach, and the Devil himself would be adroit to force one out of him!"

"My father has some secret trouble which I cannot even guess," replied Gerande, a sad anxiety betraying itself in her countenance.

"Mademoiselle, do not permit so much sadness to overshadow your heart. You know the singular habits of Master Zacharius. Who can read his secret thoughts in his face? Something annoying has no doubt happened to him, but he will have forgotten it by to-morrow, and will repent having made his daughter anxious."

It was Aubert who spoke thus, glancing at Gerande's lovely eyes. Aubert was the first apprentice whom Master Zacharius had ever admitted to the intimacy of his labors, for he appreciated his intelligence, discretion, and goodness of heart; and this young man had attached himself to Gerande with that mysterious faith which presides over heroic denouements.

Gerande was eighteen years of age. The oval of her face recalled that of the artless Madonnas, whom veneration still displays at the street corners of the antique towns of Brittany. Her eyes be-

trayed an infinite simplicity. She was beloved as the most delicate realization of a poet's dream. Whilst, night and morning, she read her Latin prayers in her iron-clasped missal, Gerande also discovered a hidden sentiment in Aubert Thun's heart, and comprehended what a profound devotion the young workman had for her. Indeed, the whole world in his eyes was condensed in this old house of the clockmaker, and he passed all his time near the young girl, when, the hours of work over, he left her father's workshop.

Old Scholastique saw all this, but said nothing. Her loquacity exhausted itself in preference on the evils of the times, and the little worries of the household. Nobody tried to stop its course. It was with her as with the musical snuff-boxes which they made at Geneva; once wound up, unless you broke her, she would play all her airs through.

Finding Gerande absorbed in a melancholy silence, Scholastique left her old wooden chair, fixed a taper on the end of a candlestick, lit it, and placed it near a small waxen Virgin, sheltered in her niche of stone. It was the family custom to kneel before this protecting Madonna of the domestic hearth, and to beg her kindly watchfulness during the coming night; but on this evening, Gerande remained silent in her seat.

"Well, well, dear demoiselle," said the astonished Scholastique, "supper is over, and it is time to go to bed. Why do you tire your eyes by sitting up late? Ah, Holy Virgin! It is much better to sleep, and to get a little comfort from happy dreams! In these detestable times in which we live, who can promise herself a fortunate day?"

"Ought we not to send for a doctor for my father?" asked Gerande.

"A doctor!" cried the old domestic. "Has Master Zacharius ever listened to their fancies and pompous sayings? He

might accept medicines for the watches, but not for the body!"

"What shall we do?" murmured Gerande. "Has he gone to work, or has he retired?"

"Gerande," answered Aubert, softly, "some mental trouble annoys your father, and that is all."

"Do you know what it is, Aubert?"

"Perhaps, Gerande."

"Tell us, then," cried Scholastique, eagerly, prudently extinguishing her taper.

"FOR several days, Gerande," said the young apprentice, "something absolutely incomprehensible has been going on. All the watches which your father has made and sold for some years have suddenly stopped. Very many of them have been brought back to him. He has carefully taken them to pieces; the springs were in good condition, and the wheels well set. He has put them together yet more carefully; but, despite his skill, they have refused to go."

"The devil's in it!" cried Scholastique.

"Why say you so?" asked Gerande. "It seems very natural to me. All things are limited in the world. The infinite cannot be fashioned by the hands of men."

"It is none the less true," returned Aubert, "that there is in this something very mysterious and extraordinary. I have myself been helping Master Zacharius to search for the cause of this derangement of his watches; but I have not been able to find it, and more than once I have despairingly let my tools fall from my hands."

"But why undertake so vain a task?" resumed Scholastique. "Is it natural that a little copper instrument should go of itself, and mark the hours? We ought to have kept to the sun-dial!"

"You will not talk thus, Scholastique,"

said Aubert, "when you learn that the sun-dial was invented by Cain."

"O Lord! what are you telling me?"

"Do you think," asked Gerande, simply, "that we might pray to God to give life to my father's watches?"

"Without doubt," replied Aubert.

"Good! These will be useless prayers," grumbled the old servant, "but Heaven will pardon them for their good intent."

The taper was relighted. Scholastique, Gerande, and Aubert knelt down together upon the flags of the room. The young girl prayed for her mother's soul, for a blessing for the night, for travelers and prisoners, for the good and the wicked, and more earnestly than all for the unknown misfortunes of her father. Then the three devout souls rose with somewhat of confidence in their hearts, for they had laid their sorrow in God's bosom.

Aubert repaired to his own room; Gerande sat pensively by the window, whilst the last lights were disappearing from the city streets. The terrors of this winter's night had increased. Sometimes, with the whirlpools of the river, the wind engulfed itself among the piles, and the whole house shivered and shook; but the young girl, absorbed in her sadness, thought only of her father. After hearing what Aubert told her, the malady of Master Zacharius took fantastic proportions in her mind; and it seemed to her as if his dear existence, become purely mechanical, moved now with pain and effort on its exhausted pivots.

Suddenly the shutters, impelled by the squall, struck against the windows of the room. The young girl leaned out of the window to draw to the shutter shaken by the wind, but she feared to do so. It seemed to her that the rain and the river, confounding their tumultuous waters, were submerging the frail house, the planks of which were creaking in every direction. She would have flown from her

chamber, but she saw below the flickering of a light which appeared to come from Master Zacharius's retreat, and in one of those momentary calms, during which the elements keep a sudden silence, her ear caught plaintive sounds. She tried to shut her window, but could not. The wind violently repelled her, like a villain who was introducing himself into a dwelling.

Gerande thought she would go mad from terror. What was her father doing? She opened the door, and it escaped from her hands, and shook loudly under the attack of the tempest. Gerande then found herself in the dark supper-room, succeeded in gaining, on tiptoe, the staircase which led to her father's shop, and, pale and fainting, glided down.

THE old watchmaker was upright in the middle of the room, which was filled with the groans of the river. His bristling hair gave him a sinister aspect. He was talking and gesticulating, without seeing or hearing anything. Gerande arrested her stops on the threshold.

"It is death!" said Master Zacharius, in a thick voice; "it is death! Why should I live longer, now that I have dispersed my existence over the earth? For I, Master Zacharius, am really the creator of all the watches that I have fashioned! It is a part of my very soul that I have shut up in each of these boxes of iron, silver, or gold! Every time that one of these accursed watches stops, I feel my heart cease beating, for I have regulated them with its pulsations!"

As he spoke in this strange way, the old man cast his eyes on his bench. There lay all the pieces of a watch that he had carefully taken apart. He took up a sort of hollow cylinder, called a barrel, in which the spring is enclosed, and removed the steel spiral, which, instead of relaxing itself, according to the laws of

its elasticity, remained coiled on itself, like a sleeping viper. It seemed knotted, like those impotent old men whose blood has long been congealed. Master Zacharius vainly essayed to uncoil it with his thin fingers, the outlines of which were exaggerated on the wall; but he tried in vain, and soon, with a terrible cry of anguish and rage, he threw it through the peephole into the boiling Rhone.

Gerande, her feet riveted to the floor, stood breathless and motionless. She wished to approach her father, but could not. Giddy hallucinations took possession of her. Suddenly she heard, in the shade, a voice murmur in her ears, "Gerande, dear Gerande; grief still keeps you awake! Go in again, I beg of you; the night is cold."

"Aubert!" whispered the young girl. "You!"

"Ought I not to be disturbed by what disturbs you?"

These soft words sent the blood back into the young girl's heart. She leaned on Aubert's arm, and said to him, "My father is very ill, Aubert! You alone can cure him, for this disorder of the mind would not yield to his daughter's consolings. His mind is attacked by a very natural delusion, and in working with him, repairing the watches, you will bring him back to reason. Aubert," she continued, "it is not true, is it, that his life confounds itself with that of his watches?"

Aubert did not reply.

"Then it must be a calling reproved of God—that of my father?"

"I know not," returned the apprentice, warming the cold hands of the girl with his own. "But go back to your room, my poor Gerande, and with sleep recover hope!"

Gerande slowly returned to her chamber, and remained there till daylight; sleep did not weigh down her eyelids. Meanwhile, Master Zacharius, always

mute and motionless, gazed at the river as it rolled turbulently at his feet.

CHAPTER II

The Pride of Science

THE severity of a Geneva merchant in business matters has become proverbial. He is rigidly honorable, and excessively just. What must, then, have been the shame of Master Zacharius, when he saw these watches, which he had so carefully constructed, returning to him from every direction?

It was certain that these watches had suddenly stopped, and without any apparent reason. The wheels were in a good condition and firmly fixed, but the springs had lost all elasticity. Vainly did the watchmaker try to replace them, the wheels remained motionless. These unaccountable derangements were greatly to the old man's discredit. His noble inventions had many times brought upon him suspicions of sorcery, which now seemed confirmed. These rumors reached Gerande, and she often trembled for her father, when she saw the malicious glances directed towards him.

Yet on the morning after this night of anguish, Master Zacharius seemed to resume work with some confidence. The morning sun inspired him with some courage. Aubert hastened to join him in the shop, and received an affable "good-day."

"I am getting on better," said the old man. "I don't know what strange troubles of the head attacked me yesterday, but the sun has quite chased them away, with the clouds of the night."

"In faith, master," returned Aubert, "I don't like the night for either of us!"

"And thou art right, Aubert. If you ever become a superior man, you will understand that day is as necessary to you as food. A man of merit owes him-

self to the homage of the rest of mankind who recognize his worth."

"Master, it seems to me that the pride of science has possessed you."

"Pride, Aubert! Destroy my past, annihilate my present, dissipate my future, and then it will be permitted to me to live in obscurity! Poor boy, who comprehends not the sublime things to which my art is wholly devoted! Art thou not but a tool in my hands?"

"Yet, Master Zacharius," resumed Aubert, "I have more than once merited your praise for the manner in which I adjusted the most delicate pieces of your watches and clocks."

"No doubt, Aubert; thou art a good workman, such as I love; but when thou workest, thou thinkest thou hast in thy hands but copper, silver, gold; thou dost not perceive these metals, which my genius animates, palpitating like living flesh! Thus thou wouldst not die, with the death of thy works!"

Master Zacharius remained silent after these words; but Aubert essayed to keep up the conversation. "Indeed, master," said he, "I love to see you work so unceasingly! You will be ready for the festival of our corporation, for I see that the work on this crystal watch is going forward famously."

"No doubt, Aubert," cried the old watchmaker, "and it will be no slight honor for me to have been able to cut and shape the crystal to the durability of a diamond! Ah, Louis Berghen did well to perfect the art of diamond-cutting, which has enabled me to polish and pierce the hardest stones!"

Master Zacharius was holding several small watch pieces of cut crystal, and of exquisite workmanship. The wheels, pivots, and box of the watch were of the same material, and he had employed remarkable skill in this very difficult task. "Would it not be fine," said he, his face flushing, "to see this watch palpitating

beneath its transparent envelope, and to be able to count the very beatings of its heart?"

"I will wager, sir," replied the young apprentice, "that it will not vary a second in a year."

"And you would wager on a certainty! Have I not imparted to it all that is purest of myself? And does my heart itself vary?"

Aubert did not dare to lift his eyes to his master's transfigured face.

"TELL me frankly," said the old man, sadly. "Have you never taken me for a fool? Do you not think me sometimes subject to dangerous folly? Yes; is it not? In my daughter's eyes and yours, I have often read my condemnation. Oh!" he cried, as if in pain, "not to be understood by those whom one most loves in the world! But I will prove victoriously to thee, Aubert, that I am right! Do not bow thy head, for thou wilt be stupefied. The day on which thou understandest how to listen to and comprehend me, thou wilt see that I have discovered the secrets of existence, the secrets of the mysterious union of the soul with the body!"

As he spoke thus, Master Zacharius appeared superb in his vanity. His eyes glittered with a supernatural fire, and his pride illumined every feature. And truly, if ever vanity was excusable, it was such vanity as that of Master Zacharius!

The watchmaker's art, indeed, down to his time, had remained almost in its infancy. From the day when Plato, four centuries before the Christian era, invented the night watch, a sort of clepsydra which indicated the hours of the night by the sound and playing of a flute, the science had continued nearly stationary. The masters paid more attention to the arts than to mechanics, and it was the period of beautiful watches of iron, copper, wood, silver, which were

richly engraved, like one of Cellini's ewers. They made a watch which was a masterpiece of chasing, which measured time very imperfectly, but was still a masterpiece. When the artist's imagination was not directed to the perfection of modeling, it sought to create clocks with moving figures and melodious sounds, which were put in operation in a very diverting fashion. Besides, who troubled himself, in those days, with regulating the advance of the hours? The delays of the law were not as yet invented; the physical and astronomical sciences had not as yet established their calculations on scrupulously exact measurements; there were neither establishments which were shut at a given hour, nor trains which departed at a precise moment. In the evening the curfew bell sounded; and at night the hours were cried amid the universal silence. Certainly people did not live so long, if existence is measured by the amount of business done; but they lived better. The mind was enriched with the noble sentiments born of the contemplation of masterpieces. They built a church in two centuries, a painter painted but few pictures in the course of his life, a poet only composed one great work; but these were so many masterpieces.

When the exact sciences began at last to make some progress, watch and clock making followed in their path, though it was always arrested by an insurmountable difficulty,—the regular and continuous measurement of time.

It was in the midst of this stagnation that Master Zacharius invented the escapement, which enabled him to obtain a mathematical regularity by submitting the movement of the pendulum to a constant force. This invention had turned the old man's head. Pride, rising in his heart, like mercury in the thermometer, had attained the height of transcendent folly. By analogy he had allowed himself to be

drawn to materialistic conclusions, and as he constructed his watches, he fancied that he had surprised the hitherto undiscovered secrets of the union of the soul with the body.

So it was that, on this day, perceiving that Aubert listened to him attentively, he said to him in a tone of simple conviction, "Dost thou know what life is, my child? Hast thou comprehended the action of those springs which produce existence? Hast thou examined thyself? No; and yet, with the eyes of science, thou mightst have seen the intimate relation which exists between God's work and my own, for it is from his creature that I have copied the combinations of the wheels of my clocks."

"Master," replied Aubert, eagerly, "can you compare a copper or steel machine with that breath of God which is called the soul, which animates our bodies, as the breeze lends motion to the flowers? What mechanism could be so adjusted as to inspire us with thought?"

"That is not the question," responded Master Zacharius, gently, but with all the obstinacy of a blind man walking towards an abyss. "In order to understand me, thou must recall the object of the escapement which I have invented. When I saw the irregular working of clocks; I understood that the movements shut up in them did not suffice, and that it was necessary to submit them to the regularity of some independent force. I then thought that the balance-wheel might accomplish this, and I succeeded in regulating the movement! Now, was it not a sublime idea that came to me, to return to it its lost force by the action of the clock itself, which it was charged with regulating?"

Aubert assented by a motion.

"**N**OW, Aubert," continued the old man, growing animated, "cast thine eyes upon thyself! Dost thou not

understand that there are two distinct forces in us, that of the soul and that of the body, that is, a movement and a regulator? The soul is the principle of life; that is, then, the movement. Whether it is produced by a weight, by a spring, or by an immaterial influence, it is none the less at the heart. But without the body this movement would be unequal, irregular, impossible! Thus the body regulates the soul, and, like the balance-wheel, it is submitted to regular oscillations. And this is so true, that one falls ill when one's drink, food, sleep—in a word, the functions of the body—are not properly regulated! As in my watches, the soul renders to the body the force lost by its oscillations. Well, what produces this intimate union between soul and body, if not a marvelous escapement, by which the wheels of the one work into the wheels of the other? This is what I have divined, applied; and there are no longer any secrets for me in this life, which is, after all, but an ingenious mechanism!"

Master Zacharius was sublime to see in this hallucination, which transported him to the ultimate mysteries of the infinite. But his daughter Gerande, standing on the threshold of the door, had heard all. She rushed into her father's arms, and he pressed her convulsively to his breast.

"What is the matter with thee, my daughter?" he asked.

"If I had only a spring here," said she, putting her hand on her heart, "I would not love you as I do, my father."

Master Zacharius looked intently at Gerande, and did not reply. Suddenly he uttered a cry, carried his hand eagerly to his heart, and fell fainting on his old leathern chair.

"Father, what is the matter?"

"Help!" cried Aubert. "Scholastique!"

But Scholastique did not come at once. Someone was knocking at the front door;

she had gone to open it, and when she returned to the shop, before she could open her mouth, the old watchmaker, having recovered his senses, spoke: "I divine, my old Scholastique, that you bring me still another of those accursed watches which have stopped."

"O Lord, it is true enough!" replied Scholastique, handing a watch to Aubert.

"My heart could not be mistaken!" said the old man, with a sigh.

Aubert carefully adjusted the watch, but it would not go.

CHAPTER III

A Strange Visit

POOR Gerande would have lost her life with that of her father, had it not been for the thought of Aubert, who still attached her to the world. The old watchmaker was, little by little, passing away. His faculties evidently grew more feeble, as he concentrated them on a single thought. By a sad association of ideas, he referred everything to his monomania, and human existence seemed to have departed from him. Moreover, certain malicious rivals revived the hostile rumors which had spread concerning his labors.

The news of the strange derangements which his watches betrayed had a prodigious effect upon the master clock-makers of Geneva. What signified this sudden inertia of their wheels, and why these strange relations which they seemed to have with the old man's life? These were the kind of mysteries which people never contemplate without a secret terror. In the various classes of the town, from the apprentices to the great lords who used his watches, there was no one who could not himself judge of the singularity of the fact. The citizens wished, but in vain, to penetrate to Master Zacharius. He fell very ill; and this enabled his

daughter to withdraw him from incessant visits, which thereupon degenerated into reproaches and recriminations.

Medicines and physicians were powerless in presence of this organic wasting away, the cause of which could not be discovered. It sometimes seemed as if the old man's heart had ceased to beat; then the pulsations were resumed with an alarming irregularity.

A CUSTOM existed, in those days, of submitting the works of the masters to the judgment of the people. The heads of the various corporations sought to distinguish themselves by the novelty or the perfection of their productions, and it was among these that the condition of Master Zacharius excited the most lively, because most interested, commiseration. His rivals pitied him the more willingly, the less he was to be feared. They never forgot the old man's success, when he exhibited his magnificent clocks with moving figures, his striking watches, which provoked the general admiration, and commanded such high prices in the cities of France, Switzerland, and Germany.

Meanwhile, thanks to the constant and tender care of Gerande and Aubert, his strength seemed to return a little, and in the tranquillity in which his convalescence left him, he succeeded in detaching himself from the thoughts which had absorbed him. As soon as he could walk, his daughter lured him away from the house, which was still besieged with dissatisfied intruders. Aubert remained in the shop, vainly adjusting and readjusting the rebel watches; and the poor boy, completely mystified, sometimes covered his face in his hands, fearful that he, like his master, might go mad.

So it came about that the old watchmaker at last perceived that he was not alone in the world. As he looked upon his young and lovely daughter, himself

old and broken, he reflected that after his death she would be left alone, without support. Many of the young mechanics of Geneva had already sought to win Gerande's love; but none of them had succeeded in gaining access to the impenetrable retreat of the watchmaker's household. It was natural, then, that during this lucid interval the old man's choice should fall on Aubert Thun. Once struck with this thought, he remarked to himself that this young couple had been brought up with the same ideas and the same beliefs, and the oscillations of their hearts seemed to him, as he said one day to Scholastique, "isochronal."

The old servant, literally delighted with the word, though she did not understand it, swore by her holy patron saint that the whole town should hear it within a quarter of an hour. Master Zacharius found it difficult to calm her, but made her promise to keep on this subject a silence which she never was known to observe.

So, though Gerande and Aubert were ignorant of it, all Geneva was soon talking of their speedy union. But it happened also that, while the worthy folk were gossiping, a strange chuckle was often heard, and a voice saying, "Gerande will not wed Aubert."

If the gossipers turned around, they found themselves facing a little old man who was quite a stranger to them.

How old was this singular being? No one could have told. People conjectured that he must have existed for several centuries, and that was all. His big flat head rested upon shoulders the width of which was equal to the height of his body; this was not above three feet. This personage would have figured well on a pendulum fulcrum, for the dial would have naturally been placed on his face, and the balance-wheel would have oscillated at its ease in his chest. His nose might readily be taken for the style of a

sun-dial, for it was small and sharp; his teeth, far apart, resembled the gearing of a wheel, and ground themselves between his lips; his voice had the metallic sound of a bell, and you could hear his heart beat like the tick-tick of a clock. This little man, whose arms moved like the needles on a dial, walked with jerks, without ever turning around. If anyone followed him, it was found that he walked a league an hour, and that his course was nearly circular.

This strange being had not long been seen wandering, or rather circulating, around the town; but it had already been observed that, every day, at the moment when the sun passed the meridian, he stopped before the Cathedral of Saint Pierre, and resumed his course after the twelve strokes of midday had sounded. Excepting at this precise moment, he seemed to become a part of all the conversations in which the old watchmaker was talked of, and people asked each other, in terror, what relation could exist between him and Master Zacharius. It was remarked, too, that he never lost sight of the old man and his daughter while they were taking their promenades.

One day Gerande perceived this monster looking at her with a hideous smile. She clung to her father with a frightened motion.

"What is the matter, my Gerande?" asked Master Zacharius.

"I do not know," replied the young girl.

"But thou art changed, my child. Art thou going to fall ill in thy turn? Ah, well," he added, with a sad smile, "then I must take care of thee, and I will do it tenderly."

"O father, it will be nothing. I am cold, and I imagine that it is——"

"What, Gerande?"

"The presence of that man, who always follows us," she replied in a low tone.

Master Zacharius turned towards the little old man. "Faith, he goes well," said he, with a satisfied air, "for it is just four o'clock. Fear nothing, my child; it is not a man, it is a clock!"

GERANDE looked at her father in terror. How could Master Zacharius read the hour on this strange creature's visage?

"By the by," continued the old watchmaker, paying no further attention to the matter, "I have not seen Aubert for several days."

"He has not left us, however, father," said Gerande, whose thoughts turned into a gentler channel.

"What is he doing, then?"

"He is working."

"Ah!" cried the old man. "He is at work repairing my watches, is he not? But he will never succeed; for it is not repairs they need, but a resurrection!"

Gerande remained silent.

"I must know," added the old man, "if they have brought back any more of those damned watches, upon which the Devil has imposed an epidemic!"

After these words Master Zacharius fell into absolute taciturnity, till he knocked at the door of his house, and for the first time since his convalescence descended to his shop, while Gerande sadly repaired to her chamber.

At this moment when Master Zacharius crossed the threshold of his shop, one of the many clocks suspended on the wall struck five o'clock. Usually the bells of these clocks—admirably regulated as they were—struck simultaneously, and this rejoiced the old man's heart; but on this day the bells struck one after another, so that for a quarter of an hour the ear was deafened by the successive noise. Master Zacharius suffered terribly; he could not remain still, but went from one clock to the other, and beat the measure for them, as an orches-

tra leader who has no longer control over his musicians.

When the last had ceased striking, the door of the shop opened, and Master Zacharius shuddered from head to foot to see before him the little old man, who looked fixedly at him and said, "Master, may I not speak with you a few moments?"

"Who are you?" asked the watchmaker, abruptly.

"A colleague. I am charged with regulating the sun."

"Ah, you regulate the sun!" replied Master Zacharius, eagerly, without winning. "I can scarcely compliment you upon it. Your sun goes badly, to make ourselves agree with it, we have to keep advancing and retarding our clocks!"

"And, by the Devil's cloven foot," cried this weird personage, "you are right, my master! My sun does not always indicate midday at the same moment as your clocks; but some day it will be known that this is because of the inequality of the movement of the earth's transfer, and a mean midday will be invented which will regulate this irregularity!"

"Shall I live till then?" asked the old man, with glistening eyes.

"Without doubt," replied the little old man, laughing. "Can you believe that you will ever die?"

"Alas! I am very ill."

"Ah, let us talk of that. By Beelzebub! that will lead to just what I wish to speak to you about."

Saying this, the strange being leaped upon the old leather chair, and carried his legs one under the other, after the fashion of the bones which the painters of funeral hangings cross beneath skulls. Then he resumed, in an ironical tone, "See, Master Zacharius, what is going on in this good town of Geneva? They say that your health is failing, that your watches have need of a doctor!"

"Ah, you believe that there is an

intimate relation between their existence and mine?" cried Master Zacharius.

"Why, I imagine that these watches have faults, even vices. If these wantons do not preserve a regular conduct, it is right that they should bear the consequences of their irregularity. It seems to me that they have need of reforming a little!"

"What do you call faults?" asked Master Zacharius, reddening at the sarcastic tone in which these words were uttered. "Have they not a right to be proud of their origin?"

"Not too proud, not too proud," replied the little old man. "They bear a celebrated name; and an illustrious signature is graven on their cases, it is true, and theirs is the exclusive privilege of being introduced among the noblest families; but for some time they have become deranged, and you can do nothing about it, Master Zacharius; and the stupid apprentice in Geneva could prove it to you!"

"TO me, to me!" cried Master Zacharius, with a flush of outraged pride.

"To you, Master Zacharius—you, who cannot restore life to your watches!"

"But it is because I have a fever, and so have they also!" replied the old man, as a cold sweat broke out upon him.

"Very well, they will die with you, since you are prevented from imparting a little elasticity to their springs."

"Die! No, for you yourself have said it! I cannot die,—I, the first watchmaker in the world; I, who, by means of these pieces and diverse wheels, have been able to regulate the movement with absolute precision! Have I not subjected time to exact laws, and can I not dispose of it like a despot? Before a sublime genius had disposed regularly these wandering hours, in what vast waste was human destiny plunged? At what certain mo-

ment could the acts of life be connected with each other? But you, man or devil, whatever you may be, have never considered the magnificence of my art, which calls every science to its aid! No, no! I, Master Zacharius, cannot die, for, as I have regulated time, time would end with me! It would return to the infinite, whence my genius has rescued it, and it would lose itself irreparably in the gulf of chaos! No, I can no more die than the Creator of this universe, submitted to its laws! I have become his equal, and I have partaken of his power! If God has created eternity, Master Zacharius has created time!"

The old watchmaker now resembled the fallen angel, defiant in the presence of the Creator. The little old man seemed to breathe into him this impious transport.

"Well said, master," he replied. "Beezeleubub had less right than you to compare himself with God! Your glory must not perish! So your servant desires to give you the method of controlling these rebellious watches."

"What is it? what is it?" cried Master Zacharius.

"You shall know on the day after that on which you have given me your daughter's hand."

"My Gerande?"

"Herself!"

"My daughter's heart is not free," replied Master Zacharius, who seemed neither astonished nor angry.

"Bah! She is not the least beautiful of watches; but she will end by stopping also——"

"My daughter,—my Gerande! No!"

"Well, return to your watches, Master Zacharius. Adjust and readjust them. Get ready the marriage of your daughter and your apprentice. Temper your springs with your best steel. Bless Aubert and the pretty Gerande. But

remember, your watches will never go, and Gerande will not wed Aubert!"

Thereupon the little old man disappeared so quickly that Master Zacharius could not hear six o'clock strike in his breast.

CHAPTER IV

The Church of St. Pierre

MASTER ZACHARIUS became more feeble in mind and body every day. An unusual excitement, indeed, impelled him to continue his work more eagerly than ever, nor could his daughter entice him from it. From morning till night discontented purchasers besieged the house, and they got access to the old watchmaker himself, who knew not which of them to listen to.

"This watch is too slow, and I cannot succeed in regulating it," said one.

"This," said another, "is absolutely obstinate, and stands still, as did Joshua's sun."

"If it is true," said most of them, "that your health has an influence on that of your watches, Master Zacharius, get well as soon as possible."

The old man gazed at these people with haggard eyes, and only replied by shaking his head, or by a few sad words: "Wait till the first fine weather, my friends. The season is coming which revives existence in wearied bodies. The sun must come to warm us all!"

"A fine thing, if my watches are to be ill through the winter!" said one of the most angry. "Do you know, Master Zacharius, that your name is inscribed in full on their faces? By the Virgin, you do little honor to your signature!"

It happened at last that the old man, abashed by these reproaches, took some pieces of gold from his old trunk, and began to buy back the damaged watches.

At news of this, the customers came in a crowd, and the poor watchmaker's money fast melted away; but his honesty remained intact. Gerande warmly praised his delicacy, which was leading him straight towards ruin; and Aubert soon offered his own savings to his master.

Scholastique alone refused to listen to reason on the subject; but her efforts failed to prevent the unwelcome visitors from reaching her master, and from soon departing with some valuable object. Then her chattering was heard in all the streets of the neighborhood, where she had long been known. She eagerly denied the rumors of sorcery and magic on the part of Master Zacharius, which gained currency, but as at bottom she was persuaded of their truth, she said her prayers over and over again to redeem her pious falsehoods.

It had been noticed that for some time the old watchmaker had neglected his religious duties. Time was, when he had accompanied Gerande to church, and had seemed to find in prayer the intellectual charm which it imparts to thoughtful minds, as it is the most sublime exercise of the imagination. This voluntary neglect of holy practices, added to the secret habits of his life, had in some sort confirmed the accusations leveled against his labors. So, with the double purpose of drawing her father back to God and to the world, Gerande resolved to call religion to her aid. She thought that it might give some vitality to his dying soul; but in the soul of Master Zacharius, the dogmas of faith and humility had to combat, an insurmountable pride, and came into collision with that vanity of science which connects everything with itself, without rising to the infinite source whence first principles flow. It was under these circumstances that the young girl undertook her father's conversion, and her influence was so effective that the old watchmaker promised to attend high

mass at the Cathedral on the following Sunday.

"Old Scholastique could not contain her joy, and at last found irrefutable arguments against the gossiping tongues, which accused her master of impiety. She spoke of it to her neighbors, her friends, her enemies, to those whom she knew not as well as to those whom she knew.

"In faith, we scarcely believe what you tell us, dame Scholastique," they replied; "Master Zacharius has always acted in concert with the devil!"

"You haven't counted, then," replied the old servant, "the fine bells which strike for my master's clocks? How many times they have struck the hours of prayer and the mass!"

"NO doubt," they would reply. "But has he not invented machines which go all by themselves, and which actually do the work of a real man?"

"Could a child of the devil," exclaimed dame Scholastique, wrathfully, "have executed the fine iron clock of the château of Andermatt, which the town of Geneva was not rich enough to buy? A pious motto appeared at each hour, and a Christian who obeyed them would have gone straight to Paradise! Is that the work of the devil?"

This masterpiece, made twenty years before, had carried Master Zacharius's fame to its acme; but even then there had been accusations against him of sorcery. At least, the old man's visit to the Cathedral would reduce malicious tongues to silence.

The Sunday so ardently anticipated by Gerande at last arrived. The weather was fine, and the temperature inspiring. The people of Geneva were passing quietly through the streets, gayly chatting about the return of spring. Gerande, tenderly taking the old man's arm, directed her steps towards the Cathedral,

while Scholastique followed behind with the prayer-books. People looked curiously at them as they passed. The old watchmaker permitted himself to be led like a child, or rather like a blind man. The faithful of Saint Pierre were almost frightened when they saw him cross the threshold, and shrank back at his approach.

The chants of high mass were already resounding through the church. Gerande advanced to her accustomed bench, and kneeled with profound and simple reverence. Master Zacharius remained standing beside her.

The ceremonies continued with the majestic solemnity of that pious age, but the old man had no faith. He did not implore the pity of Heaven with cries of anguish of the "Kyrie"; he did not, with the "Gloria in Excelsis," sing the splendors of the celestial heights; the reading of the Testament did not draw him from his materialistic revery, and he forgot to join in the homage of the "Credo." This proud old man remained motionless, as insensible and silent as a stone statue; and even at the solemn moment when the bell announced the miracle of transubstantiation, he did not bow his head, but gazed directly at the sacred host which the priest raised above the heads of the faithful. Gerande looked at her father, and a flood of tears moistened her missal.

At this moment the clock of Saint Pierre struck half past eleven. Master Zacharius turned quickly towards this ancient clock which he had regulated and which still spoke. It seemed to him as if its face was gazing steadily at him; the figures of the hours shone as if they had been engraved in lines of fire, and the hands darted forth electric sparks from their sharp points.

The mass ended. It was customary for the "Angelus" to be said at noon, and the priests, before leaving the altar,

waited for the clock to strike the hour of twelve. In a few moments this prayer would ascend to the feet of the Virgin. But suddenly a harsh voice was heard. Master Zacharius uttered a piercing cry.

The large hand of the clock, having reached twelve, had abruptly stopped, and the clock did not strike the hour.

Gerande hastened to her father's aid. He had fallen down motionless, and they carried him outside the church. "It is the death-blow!" murmured Gerande, sobbing.

When he had been borne home, Master Zacharius lay upon his bed utterly crushed. Life seemed only to still exist on the surface of his body, like the last whiffs of smoke about a lamp just extinguished.

When he came to his senses Aubert and Gerande were leaning over him. At this supreme moment the future took in his eyes the shape of the present. He saw his daughter alone, without support. "My son," said he to Aubert, "I give my daughter to thee."

So saying, he stretched out his hand towards his two children, who were thus united at his death-bed.

But soon Master Zacharius lifted himself up in a paroxysm of rage. The words of the little old man recurred to his mind. "I do not wish to die!" he cried; "I cannot die! I, Master Zacharius, ought not to die! My books,—my accounts!"

He sprang from his bed towards a book in which the names of his customers, and the articles which had been sold to them, were inscribed. He seized it and rapidly turned over its leaves, and his emaciated thumb fixed itself on one of the pages.

"There!" he cried, "there! this old iron clock, sold to Pittonaccio! It is the only one that has not been returned to me! It still exists,—it goes,—it lives! Ah, I wish for it,—I must find it! I will

take such care of it that death will no longer seek me!" And he fainted away.

Aubert and Gerande knelt by the old man's bedside, and prayed together.

CHAPTER V

The Hour of Death

SEVERAL days passed, and Master Zacharius, though almost dying, rose from his bed and returned to active life, under a supernatural excitement. He lived by pride. But Gerande did not deceive herself; her father's body and soul were forever lost.

The old man got together his last resources, without thought of those who were dependent upon him. He betrayed an incredible energy, walking, ferreting about, and mumbling strange, incomprehensible words. One morning Gerande went down to his shop. Master Zacharius was not there. She waited for him all day. Master Zacharius did not return.

"Where can he be?" Aubert asked himself. An inspiration suddenly came to his mind. He remembered the last words which Master Zacharius had spoken. The old man only lived now in the old iron clock that had not been returned! Master Zacharius must have gone in search of it. Aubert spoke of this to Gerande.

"Let us look at my father's book," she replied.

They descended to the shop. The book was open on the bench. All the watches or clocks made by the old man, and which had been returned to him out of order, were stricken out, excepting one. "Sold to M. Pittonaccio, an iron clock, with bell and moving figures; sent to his château at Andermatt."

It was this "moral" clock of which Scholastique had spoken with so much enthusiasm.

"My father is there!" cried Gerande.

"Let us hasten thither," replied Aubert. "We may still save him!"

"Not for this life," murmured Gerande, "but at least for the other."

"By the grace of God, Gerande! The château of Andermatt stands in the gorge of the 'Dents-du-Midi,' twenty hours from Geneva. Let us go!"

That very evening Aubert and Gerande, followed by the old servant, set out on foot by the road which skirts Lake Leman. At last, late the next day, they reached the hermitage of Notre-Dame, which is situated at the base of the Dents-du-Midi, six hundred feet above the Rhone. They were nearly dead with fatigue. The hermit received the wanderers as night was falling. They could not have gone another step, and here they must needs rest.

The hermit could give them no news of Master Zacharius. They could scarcely hope to find him still living amid these sad solitudes. The night was dark, the wind howled amid the mountains, and the avalanches roared and thundered down from the summits of the broken crags.

Aubert and Gerande, crouching before the hermit's hearth, told him their melancholy tale. Their mantles, covered with snow, were drying in a corner; and without, the hermit's dog barked lugubriously, and mingled his voice with that of the tempest.

"Pride," said the hermit to his guests, "has lost an angel created for good. It is the obstacle against which the destinies of man strike. You cannot oppose reasoning to pride, the principal of all the vices, since, by its very nature, the proud man refuses to listen to it. It only remains, then, to pray for your father!"

All four knelt down, when the barking of the dog redoubled, and someone knocked at the door of the hermitage. "Open, in the name of the devil!"

The door yielded under the blows, and

a disheveled haggard, ill-clothed man appeared.

"My father!" cried Gerande. It was Master Zacharius.

"Where am I?" said he. "In eternity! Time is ended,—the hours no longer strike,—the hands have stopped!"

"FATHER!" returned Gerande, with so piteous an emotion that the old man seemed to return to the world of the living.

"Thou here, Gerande?" he cried; "and thou, Aubert? Ah, my dear betrothed ones, you are going to be married in our old church!"

"Father," said Gerande, seizing him by the arm, "come home to Geneva,—come with us!"

"Do not abandon your children!" cried Aubert.

"Why return?" replied the old man, sadly, "to those places which my life has already quitted, and where a part of myself is forever buried?"

"Your soul is not dead!" said the hermit, solemnly.

"My soul? O no,—its wheels are good! I perceive it beating regularly——"

"Your soul is immaterial,—your soul is immortal!" replied the hermit, sternly.

"Yes,—like my glory! But it is shut up in the château of Andermatt, and I wish to see it again!"

The hermit crossed himself; Scholastique became almost inanimate. Aubert held Gerande in his arms.

"The château of Andermatt is inhabited by one who is damned," said the hermit, "one who does not salute the cross of my hermitage."

"My father, go not thither!"

"I want my soul! My soul is mine——"

"Hold him! Hold my father!" cried Gerande.

But the old man had leaped across the

threshold, and plunged into the night, crying, "Mine, mine, my soul!"

Gerande, Aubert, and Scholastique hastened after him. They went by difficult paths, across which Master Zacharius sped like a tempest, urged by an irresistible force. The snow raged round them, and mingled its white flakes with the froth of the tumbling torrents.

The château of Andermatt was a ruin even then. A thick, crumbling tower rose above it, and seemed to menace with its downfall the old gables which reared themselves below. The vast piles of jagged stones frowned gloomily to the right. Several dark halls appeared amid the débris, with cayed-in ceilings, now become the abode of vipers.

A low and narrow postern, opening upon a ditch choked with rubbish, gave access to the château. No doubt some margrave, half lord, half brigand, had inherited it; to the margrave had succeeded bandits or counterfeiters, who had been hung on the scene of their crime. The legend went that on winter nights, Satan came to lead his diabolical dances on the slope of the deep gorges in which the shadow of these ruins was engulfed.

But Master Zacharius was not dismayed by their sinister aspect. He reached the postern. No one forbade him to pass. A spacious and gloomy court presented itself to his eyes. He passed along the kind of inclined plane which brought him to one of the long corridors, the arches of which seemed to banish daylight from beneath their heavy springings. His advance was unresisted. Gerande, Aubert, and Scholastique closely followed him.

Master Zacharius, as if guided by an irresistible hand, seemed sure of his way, and strode along with rapid step. He reached an old worm-eaten door, which fell before his blows, while the bats described oblique circles around his head.

An immense hall, better preserved than

the rest, was soon reached. High sculptured panels, on which larvae, ghouls, and other strange figures seemed to agitate themselves confusedly, covered its walls. Several long and narrow windows shivered beneath the bursts of the tempest.

Master Zacharius, on reaching the middle of this hall, uttered a cry of joy. On an iron support, fastened to the wall, stood the clock in which now resided his entire life. This unequaled masterpiece represented an ancient Roman church, with its heavy bell-tower, where there was a complete chime for the anthem of the day, the "Angelus," the mass, and vespers. Above the church door, which opened at the hour of the ceremonies was placed a "rose," in the center of which two hands moved, and the archivolt of which reproduced the twelve hours of the face sculptured in relief. Between the door and the rose, just as Scholastique had said, a maxim, relative to the employment of every moment of the day, appeared on a copper plate. Master Zacharius had regulated this succession of devices with a really Christian solicitude; the hours of prayer, of work, of repast, of recreation, and of repose followed each other according to the religious discipline, and were infallibly to insure salvation to him who scrupulously observed their commands.

Master Zacharius, intoxicated with joy, went forward to take possession of the clock, when a frightful roar of laughter resounded behind him. He turned, and by the light of a smoky lamp recognized the little old man of Geneva. "You here?" cried he.

Gerande was afraid. She drew closer to Aubert.

"Good day, Master Zacharius," said the monster.

"Who are you?"

"Signor Pittonaccio, at your service! You have come to give me your daugh-

ter! You have remembered my words —'Gerande will not wed Aubert.'"

The young apprentice rushed upon Pittonaccio, who escaped from him like a shadow.

"Stop, Aubert!" cried Master Zacharius.

"Good night," said Pittonaccio; and he disappeared.

"My father, let us fly from this hateful place!" cried Gerande. "My father!"

MASTER ZACHARIUS was no longer there. He was pursuing the phantom of Pittonaccio across the rickety corridors. Scholastique, Gerande, and Aubert remained, speechless and fainting, in the large gloomy hall. The young girl had fallen upon a stone seat; the old servant knelt beside her and prayed; Aubert remained erect watching his betrothed. Pale lights wandered in the darkness, and the silence was only broken by the movements of the little animals which range among old wood, and the noise of which marks the hours of "the clock of death."

When daylight came, they ventured upon the endless staircase which wound beneath these ruined masses; for two hours they wandered thus, without meeting a living soul, and hearing only a far-off echo responding to their cries. Sometimes they found themselves buried a hundred feet below the ground, and sometimes they reached places whence they could overlook the surrounding mountains.

Chance brought them at last back again to the vast hall, which had sheltered them during this night of anguish. It was no longer empty. Master Zacharius and Pittonaccio were talking there together, the one upright and rigid as a corpse, the other crouching over a marble table.

Master Zacharius, when he perceived Gerande, went forward and took her by the hand, and led her towards Pittonac-

cio, saying, "Behold your lord and master, my daughter. Gerande, behold your husband!"

Gerande shuddered from head to foot.

"Never!" cried Aubert, "for she is my betrothed."

"Never!" responded Gerande, like a plaintive echo.

Pittonaccio began to laugh.

"You wish me to die, then?" exclaimed the old man. "There, in that clock, the last which goes of all which have gone from my hands, my life is shut up; and this man tells me, 'When I have thy daughter, this clock shall belong to thee.' And this man will not adjust it. He can break it, and plunge me into chaos. Ah, my daughter, you no longer love me!"

"My father!" murmured Gerande, recovering consciousness.

"If you knew what I have suffered, far away from this principle of my existence!" resumed the old man. "Perhaps its springs were left to wear out, its wheels to get clogged. But now, in my own hands, I can nourish this health so dear, for I must not die—I, the great watchmaker of Geneva. Look, my daughter, how these hands advance with certain step. See, five o'clock is about to strike. Listen well, and look at the maxim which is about to be revealed."

Five o'clock struck with a noise which resounded sadly in Gerande's soul, and these words appeared in red letters:

"YOU MUST EAT OF THE FRUITS OF THE TREE OF SCIENCE."

Aubert and Gerande looked at each other stupefied. These were no longer the pious sayings of the Catholic watchmaker. The breath of Satan must have passed there. But Zacharius paid no attention to this, and resumed: "Dost thou hear, my Gerande? I live, I still live! Listen to my breathing—see the blood circulating in my veins! No, thou wouldst

not kill thy father, and thou wilt accept this man for thy husband, so that I may become immortal, and at last attain the power of God!"

At these blasphemous words old Scholastique crossed herself, and Pittonaccio laughed aloud with joy.

"And then, Gerande, thou wilt be happy with him. See this man—he is Time! Thy existence will be regulated with absolute precision. Gerande, since I gave thee life, give life to thy father!"

"Gerande," murmured Aubert, "I am thy betrothed."

"He is my father!" replied Gerande, fainting.

"She is thine!" said Master Zacharius. "Pittonaccio, thou wilt keep thy promise!"

"Here is the key of the clock," replied the horrible man.

MASTER ZACHARIUS seized the long key which resembled an uncoiled snake, and ran to the clock, which he hastened to wind up with fantastic rapidity. The creaking of the spring jarred upon the nerves. The old watchmaker wound and wound the key, without stopping a moment, and it seemed as if the movement were beyond his control. He wound more and more quickly, with strange contortions, until he fell from sheer weariness.

"There it is, wound up for a century!" he cried.

Aubert rushed from the hall as if he were mad. After long wandering, he found the outlet of the hateful chateau, and hastened into the open air. He returned to the hermitage of Notre-Dame, and talked so desperately to the holy reclus, that the latter consented to return with him to the chateau of Andermatt.

Master Zacharius had not left the hall. He ran every moment to listen to the regular beating of the old clock. Meanwhile the clock had struck, and to

Scholastique's great terror, these words had appeared on the silver face:

"MAN OUGHT TO BECOME THE EQUAL OF GOD."

The old man had not only not been shocked by these impious maxims but read them deliriously, and was pleased with these thoughts of pride, while Pittonaccio kept close by him.

The marriage-contract was to be signed at midnight. Gerande, almost unconscious, saw or heard nothing. The silence was only broken by the old man's words, and the chuckling of Pittonaccio.

Eleven o'clock struck. Master Zacharius read in a loud voice:

"MAN SHOULD BE THE SLAVE OF SCIENCE, AND SACRIFICE TO IT RELATIVES AND FAMILY."

"Yes!" he cried, "there is nothing but science in this world!"

The hands slipped over the face of the clock with the hiss of a serpent, and the movement beat with accelerated strokes. Master Zacharius no longer spoke. He had fallen to the floor, he rattled, and from his oppressed bosom came only these half-broken words, "Life—science!"

The scene had now two new witnesses, the hermit and Aubert. Master Zacharius lay upon the floor; Gerande was praying beside him, more dead than alive.

And of a sudden a dry hard noise was heard, proceeding from the striking-apparatus.

Master Zacharius sprang up. "Midnight!" he cried.

The hermit stretched out his hand towards the old watchmaker—and midnight did not sound.

Master Zacharius uttered a terrible cry, when these words appeared:

"WHOEVER SHALL ATTEMPT TO MAKE HIMSELF THE EQUAL OF GOD SHALL BE FOREVER DAMNED!"

The old clock burst with a noise like thunder, and the spring, escaping, leaped across the hall with a thousand fantastic contortions; the old man rose, ran after it, trying in vain to seize it, and exclaiming, "My soul—my soul!"

The spring bounded before him, first on one side, then on the other, and he could not reach it.

At last Pittonaccio seized it, and, uttering a horrible blasphemy, ingulfed himself in the earth.

Master Zacharius fell over. He was dead.

The old matchmaker was buried in the midst of the peaks of Andermatt.

Then Aubert and Gerande returned to Geneva, and during the long life which God accorded to them, they imposed it on themselves to redeem by prayer the soul of the castaway of science.

In the Realm of Books

"The Sacred Symbols of Mu" by James Churchward. Published by Ives Washburn—New York, 258 pages, \$3.

Mr. Churchward's painstaking books on the legendary continent of Mu, "The Lost Continent of Mu" and "The Children of Mu" have been joined by his third volume on Mu: "The Sacred Symbols of Mu."

In his first book Mr. Churchward describes the prehistoric civilization of Mu, which existed over 20,000 years ago. His second book deals with the colonization of the earth by the explorers and adventures of Mu. The third book, the present volume, deals with the origin of all religions which originated or were invented in Mu. Like his two former books, it is filled with surprising statements, apparently well supported by factual evidence.

So far I have not seen any professional archaeologist or historian rise up in wrath and howl "anathema," so I for one entertain the idea that Mr. Churchward's books and his conclusions are pretty well unassailable.

I found the book very entertaining and interesting.

"The King of the Amazon" by Peter Davis. Published by the Macauley Company—New York, 310 pages, \$2.00. Fantastic adventure—plus.

This book is indeed a thriller, something to read when bored. It wakes you up, and holds you spell-bound to the very end.

Mr. Davis has taken quite a lot of ingredients, a semi-insane scientist, self styled "King of the Amazon," a lost tribe of Indians, drug fiends, torture chambers, a beauty in distress, and the savage scenery of the upper Amazonas, and mixed them all together with great skill, producing a fast moving adventure tale, which is quite enjoyable.

"Sometime," by Robert Herrick. Published by Farrar & Rinehart, Inc., New York, 338 pages, \$2.50.

The book "When Worlds Collide" (reviewed last month) seems to have stimulated quite a few authors and directed their imaginations into utilizing the "after-civilization-what-then" theme. For want of a better name, books of this type are classed as "Utopian," and as "Sometime" is very much different from the "Sexy," "Western" and "Gangster" novels of to-day, it is no wonder that the book reviewers

of the various dailies have been pawing their dictionaries in a frantic search for superlatives.

This department judges "Utopias" solely from the viewpoint of the readers of "Amazing Stories," and as such it is just passable.

The scene is laid in the future, about 1,500 years hence. America has been wiped out by a terrible war and on top of that, the northern ice cap has expanded down to almost the Equator.

The handful of survivors under-went a mysterious "profound change of mentality."

We are not told how this change came about, but anyhow we are shown a world devoid of greed, where there is no exploitation, where there is enough for everybody and where work of any sort is an undisguised pleasure. Apparently they (the people) like work so much, because it prevents them from talking or listening to philosophical platitudes with which the book is fairly crawling.

Through the ice age, the seat of everything is Khartoum in the Soudan, from which a wise teacher, one Felix, of Greek descent takes his pupils on an exploration trip to New York, which has been freed of ice meanwhile. This Felix in fact dominates the whole book, as he constantly makes comparison between the old World and the New, explaining in great detail with savagely biting sarcasms how senselessly the American lived. (According to Felix): "Lawyers were maggots feeding on society." Priests were superstition mongers, Doctors were a priestly class of pill-givers, Journalists were scavengers, etc., etc. In short, Mr. Herrick uses Felix, to scold humanity for its stupidity, its ways of living and its aims.

He has made several such indictments in some of his former books—"The Common Lot" and "Waste," only in "Sometime" he has no excuse whatever to offer for any of the shortcomings of humanity. All in all, in spite of its lack of action, "Sometime" is a very readable book.

"The Lord of Life," by Neil Bell. Published by Little Brown & Company, Boston, 295 pages, \$2.00. Another "after civilization, what then" book.

The members of the Ananias Club, alias jacket writers, as usual, promised an awful lot, but kept very little of it.

In advertising a book why not tell the truth? If a publisher is afraid to tell the truth about a book, he had better not publish it. "The Lord of Life" can be classed as Scientific-fiction only by being exceedingly charitable. It is in reality a satirically extravagant burlesque and the

scientific part is one Professor Ferrars who threatens to disrupt the World by exploding the Atom. He makes all kinds of ridiculous demands, such as the dictatorship of the British Empire, the return of the English High Church to Rome, polygamy to be optional and polyandry to be a capital offense. When he is turned down flat, he explodes the atom (sic), the World stands still, water, air, soil, flora, fauna are instantly thrown off into space, all of humanity as well, except one woman and nineteen men who were submerged in a new type submarine, which was on a trial trip to Greece.

Fortunately, the submarine has been well provisioned including tobacco, cigars and cigarettes for fifteen years, food, water and champagne, etc., to last for three years. Anyhow these supplies last until somehow vegetables and fishes have re-appeared to help out the depleted stores.

Remains the big problem: How to repopulate the Earth. Evidently some job for Sylvia the lone woman survivor, though nineteen men are willing to assist. Thank God they have a bishop along so the first and eight more marriages are consummated in all propriety. The various marriages have produced seven boys, but no girls, and as a last resort, Sid, the camp fool, is proposed as the most likely to father a female child. Sid, however, refuses and departs with the only motorboat, heading out into the unknown ocean, which somehow has returned. After days of drifting what does he see? A plane and what is in the plane? You win!—a beautiful girl, who had been saved by being in stratosphere, (sic) when the atom was exploded and the world stood still. She had established herself on an island, and with Sid's help, the census figures pertaining to population improve rapidly. Girls only of course. In due time Sid kidnaps three of Sylvia's boys and from then on, the world is back again on the road to bankmergers, telephones, radios, poverty—in short, civilization.

As hinted before, as scientific fiction "The Lord of Life" is a flop, but is amusing.

"Atom and Cosmos," by Dr. Hans Reichenbach.

Translated from the German by Edward S. Allen, Professor of Mathematics, Iowa State College. Published by The MacMillan Company, 60—5th Avenue, New York, 294 pages, \$2.00. Hats off to German Radio Audiences, who listened to and appreciated a series of lectures presented now in book form.

I am sure that the vocabulary used in this book would be as far away over the heads of the average American Radio Audience, as a report of a fistic battle or a baseball game would be over the heads of a German audience. In spite of the fact that all too technical terms are avoided and all science is explained as simply as possible, the book requires careful reading.

It represents a digest of the entire fields of

modern physics—Time and Space—Light, Radiation, Heat, Electricity, the various mechanics involved, and their philosophical consequences.

This magazine prints a great many stories based on the present and the future conception of science and their plausible further development, and many of such stories are substituting the new "Quantum" and "Relativity" theories for older traditional conceptions of motion, origin of matter, space and time, that this book could almost be called a godsend to all those readers who are intelligent enough to appreciate "the lifting of the veil."

"Congo Jake," by Augustus C. Collodon, Published by Claude Kendall, 70—5th Avenue, New York, 278 pages, \$3.00.

Through hundreds of books and many miles of more or less faked films, Africa has become quite popular and is now as well known to the average reader as the proverbial pocket.

Generally speaking it seems, that as soon as someone has travelled in some of the lesser known districts and remoter corners of the Earth, he takes the liberty of talking "freely," as there are too few people who are qualified to call him a liar. At any rate, I personally much rather listen to or read a well told, interesting lie, than truthful but dull statistics, and if you, dear reader, are looking chiefly for entertainment and thrills, by all means read "Congo Jake."

The book is the record of an active life, written by an old Congo trader who started on his adventurous career at the tender age of eleven. After a series of highly exciting adventures aboard a sailing vessel, he deserts and joins forces with the "Rhino King" alias "Detroit Tim," who has three hundred natives working for him on a large plantation.

He later on marries Milla, the planter's daughter, and afterwards, abandoning the plantation he is hired by a Dutch Company to exploit the upper Congo district.

Later on, having accumulated a fair sized fortune, he and his family land in New York. Here he comes in conflict with the so-called Law and Order, and finally lands in Brazil where he becomes a prosperous gambling house owner. His wife and son die during an epidemic and Jake ends his book with a promise to write about his South American adventures.

In spite of all the incongruities and the "Tall" stories, the book is quite readable, and is in many respects superior to "Trader Horn."

If you are fond of tales of Adventure by all means read "Congo Jake."

"Tarzan and the City of Gold," by Edgar Rice Burroughs. Published by Edgar Rice Burroughs, Tarzana, California, 316 pages, \$2.00. Here is good news for all "Tarzan" fans.

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

A Strong Plea for Reprints, Especially for the "Skylark" Series

Editor, AMAZING STORIES:

This letter is, fundamentally, an earnest plea for reprints of classics by the famous authors of several years ago. I think I can smash every argument against them that you have given. Here goes:

1. You say that the great majority of your readers do not want reprints. As regards this, I have gone over the letters published in Discussions since the January, 1930 issue, and the result is decidedly against you in this respect. I have merely skimmed over the letters—not skipping any, however—and there are probably a few more for each argument I have considered. The results are: (a) For reprints—approximately thirty want them, (b) Not exactly for reprints, but listing a few by old masters they would like to see republished—about twelve, (c) against reprints—only from ten to fifteen. Now you can see just where you stand on this argument. I admit that it is probable there are a good many more for each argument whose letters regarding them have not been printed in Discussions. Those that do not want reprints in the regular monthly issue of AMAZING STORIES, but do want them in booklet form, or in a reprint annual, are not included here.

2. You say that the reprints you did give us were not well received by the readers. This is not entirely true. What of the following? Station X, The Second Deluge, The Land That Time Forgot, The War of the Worlds, The Time Machine, The Moon Pool, The Invisible Man, and a host of others. What stories were better received than these? None, with the possible exception of those two marvelous Skylark stories and "Spacehounds of IPC." Nearly all of Wells' stories were far better than some of the trash—yes, TRASH—that we have been given in the last few years. A little too harsh; only a few were trash. I admit, however, that a few of them had no place in AMAZING STORIES. You say that you have published all of his best works already. How do you get that way? We haven't had "The War in the Air" (promised to us in the May, 1926, issue, by the way) and his "Food of the Gods." When do we get these? I admit that Jules Verne's stories weren't as popular as most of the other reprinted stories you have published. But even these were not

exactly shunned by all. I think that about sixty to seventy per cent of the readers enjoyed seeing his works again. And a reason why they were not as popular as the other reprinted classics is that you picked his better known works. Personally, I enjoyed reading them, and would like to see some of his least known works published that I have heard of, such as "The Search for the Golden Meteor"—something like that, anyway. No doubt, too, there are lots of his stories as yet untranslated into English. Boy, I'd like to see some of these!

3. I don't think that you consider the reprint question with an open mind—you seem to be prejudiced against those that want them. Whenever a reader, in Discussions, is against them, you heartily agree with him—no doubt you would hug him if he were in your office, for agreeing with you. Then you tell all about Verne not being popular, and that the poor editor was severely "brick-batted" for giving the ones he did. Actually, you, Dr. Sloane, the present editor, only gave us about two—The English at the North Pole, and its sequel, The Desert of Ice. All the others were given by the former editor, Mr. Hugo Gernsback. If a reader is for reprints, I can generally tell what your comments will contain. "Really, you should see the pile of excellent new material we have on hand for publication in the future," or you go on to tell about Verne again—or both. I haven't seen such an awful lot of excellent stories. Oh, I admit there have been some, and some of it was darned good at that, but the greatest part of it was just pretty good, fair, or poor. There were not many stories in the poor class, as most of them were fair, pretty good, or a story that wasn't bad, but not worth re-reading. If you don't tell about Verne or the pile of manuscripts on hand, you politely skip the part of the letter about reprints in the footnote.

4. This slam is not against you, Dr. Sloane, but against those readers who do not want reprints on the grounds that a story shouldn't be published twice in the magazine. The poor souls might know that none want stories they read a year or two ago. Evidently these fellows don't know what we mean by reprints. I will strive to enlighten them. A reprint is the publishing of an old story, written a number of years ago, and receiving a limited cir-

culation among a few. These few naturally remember the story if it is a good one, and tell their friends about it, and invariably mention how good it was in letters in the readers' department. To be well remembered by many, for years, a story *must* be good.

5. You say reprints were not popular? "The Moon Pool," a reprint from "Argosy," was one of the most popular stories ever published in AMAZING STORIES. Even today, readers are clamoring for this story. For this reason it recently came out in book form. I greatly enjoyed all of A. Merritt's stories I have read. Unfortunately, I only have the first part of the story in the May, 1927, issue (*The Moon Pool*). I think it would be a good idea if you were to reprint all of Merritt's works. Most readers praise him to the skies. I do. "The Ship of Ishtar" is one of the best science-fiction stories I have ever read. I would like to see that appear in AMAZING STORIES. That story would certainly go over big. I think it would increase your circulation.

Well, I am out of slams. AMAZING STORIES would be improved at least a hundred per cent if you would print stories by A. Merritt and Edgar Rice Burroughs. The latter is my favorite author, with Merritt second. Burroughs has written a great many stories in the past that have not been published in book form, and that would do very nicely for AMAZING STORIES. You haven't given us anything by Burroughs since you gave us "The Master Mind of Mars," in the Annual. That was a rattling good story. So was "The Land that Time Forgot," earlier in the same year; it started in the February, 1927, issue. I have no kick coming about you not giving us anything by Burroughs, but you haven't given us enough of them.

I would like to see some of Garrett P. Serviss' works. I have some parts of "The Second Deluge" and they are great. I have heard a lot of "The Conquest of Mars," but have never read it. I noticed a lot of readers wanted this. I am for it, too.

While on the subject of possible reprints, in addition to the ones already mentioned, I think that the following should go over BIG: "The Blind Spot," the "Darkness and Dawn" trilogy, "The Fatal Gift," J. U. Giesy's trilogy of Palos—"Palos of the Dog Star Pack," "The Mouthpiece of Zitu," and "Jason, Son of Jason"—Ralph Milne Farley's famous Radio Series—to mention several, "The Radio Man," "The Radio Beasts," "The Radio Planet," and "The Radio Flyers"—and there is a host of other stories by Homer Eon Flint, Austin Hall—who, by the way, wrote "The Spot of Life," last year. This sequel to the Blind Spot was delayed through the death of Homer Eon Flint, with whom he collaborated on the original story. This is but merely scratching the surface of the reprint field.

The idea of a Reprint Annual isn't bad, but in these times of depression it would be an added expense to the readers, and its success would be doubtful from the financial standpoint. I can readily understand why such a magazine would not be successful, when so many magazines have gone under, even two of our science fiction magazines, even though one of them did have a lot of stories by Ray Cummings and other favorites, and even a serial by Edward Elmer Smith, Ph.D., slated for future publication!

I noticed you as good as promised us reprints several months ago. Thank you for the promise. Now act upon it.

So much for the reprints this time.

Now, about the new covers. I haven't any complaints to make about the cover illustrations. They are well done. But, I liked the old style a little better. However, they are *amazing* enough, but some of them, such as that for the July issue, I can't make anything of. But, why did you have to go and change the type for the name AMAZING STORIES? I like the old streamer-type far, far better. It doesn't look like the same magazine. That, at least, should have been kept standard. At least, some of those readers that tore off the covers because they were ashamed of the magazine shouldn't have any kick coming.

I take back part of argument three. There have been quite a few excellent stories. I will write another letter sometime soon, naming a lot of original stories I have enjoyed, and criticizing the stories themselves. "The Metal Doom" certainly was a great story, though the last part was too short. Good Doctor Keller knows how to write. He deserves a high place in the literary world, and I would like to see his stories in book form.

While I do not think very many of your early stories should be reprinted, I do think that the Skylark stories should be, and I am glad you put it up to vote to the readers.

Oswald Train,
Box 94,
Barnesboro, Pa.

(Again we have the project, which we have in active execution, of reprinting the "Skylark" stories, winning the approval of a reader. We feel strongly as you do that reprints are very desirable in many cases, and we intend to give more of them in the future. Your letter is so full that it really requires no comments from us, and we are glad to find you are virtually expressing the ideas which we have already developed in our own mind.—EDITOR.)

Comments on Stories in a Recent Number of AMAZING STORIES

Editor, AMAZING STORIES:

I can hardly wait from one month till the next to get my science mag. and I wish you

wouldn't combine two months, but put them in separate copies; if you put them in one copy, why not make it as big as the quarterly and sell for the same price.

It seems as if the mag. is going back to its old form, and I was sure pleased to see a scene from one of the stories on the Aug.-Sept. cover; the stories in that copy as I liked them best are:

1. The Essence of Life—a new author but he sure knows how to write stories. Good luck Mr. Pragnell, I hope that we hear from you again.

2. The Meteor-Men of Plaza—another new author; although I don't believe it possible for people to live 1000 miles above the earth, it was a swell story anyway.

3. The Silicon Empire—a peach of a story. I have always been interested in Carbon.

4. Children of the Great Magma—I have always been interested in the South Pole and Antarctic.

5. Across the Ages—a good story but I hate to be left in suspense not knowing what is going to happen to the main characters.

6. Head Hunters Fooled and Foiled—brief but good.

There is one thing that I wish you would do—that is cut out all the ads. and make a bigger "Discussions."

Why not get Jack Williamson to write a sequel to "The Stone From the Green Star."

I am waiting for a letter from some of your readers.

John Smith,
615 North A Street,
Monmouth, Illinois.

(We have received several letters intimating that AMAZING STORIES is on the up-grade. Looking back on the past, we are not at all inclined to accept the idea that there ever was a true falling off. Naturally, there must be a difference in the stories some must be better than others, and curiously enough very severe criticism is sometimes expended on a piece of very excellent literary work. One of our very best short stories with a true O. Henry touch met with strong disapproval from one correspondent. He was so wrong in his criticisms that it was a comfort to find that his orthography was faulty, so as far as that goes, he rather gave himself the character of a dubious critic. You will find that our favorite authors, and Jack Williamson is emphatically one of them, are always with us. You will hear from all of them when the time comes.—EDITOR.)

A Comparatively New Reader's Views on AMAZING STORIES—More About "The Skylark of Space"

Editor, AMAZING STORIES:

I have been reading your magazine for a little less than a year.

I am listing below some of the recent stories I liked best.

"Faster Than Light"—best I ever read. "The King and the Pawn," "Thia of the Drylands," "The Lemurian Documents," "Suicide Durkee's Last Ride," "Swordsmen of Sarvon," "Captain Brink of the Space Marines," "World of the Living Dead"—very good, "The Shadow World," "Beyond the End of Space," "The Mother World," and many others.

I did not like "Delilah." In my opinion it was a poor story any way you look at it. I don't see how it can come under the term A. S. I never liked any of A. Hyatt Verrill's stories, such as "Death Drums."

Your best authors are: Harl Vincent, Neil R. Jones, Ed. Earl Repp and John W. Campbell, Jr.

I always read the Editorials and the Discussion Columns. I like your new cover design fine. By all means print "The Skylark of Space" and its sequel if possible. Keep up the good work.

Max Asbahr,
Corvallis, Oregon.

("Delilah" is a story which strikes a new pace and which brings out the utterly mysterious aberrations of the sleep walker, and we certainly consider it very good. Evidently the characters in it were "amazed" in what was taking place. We have no desire to apologize for any of our writers, but Mr. Verrill is emphatically a highly appreciated author and has written a great number of books, in addition to his work in the line of short stories.—EDITOR.)

Commendatory Notes on AMAZING STORIES and Some of Its Authors—Gravity and Magnetism Not Alike

Editor, AMAZING STORIES:

I have never written to A. S. before, chiefly because I had no reason to do so. The magazine satisfied me; I was content to sit back snugly and smile at less phlegmatic readers who waged ceaseless battle over reprints, illustrations, etc.

But—I certainly received a start when I obtained the current issue, and it was not until after I read the announcement that I ceased to fear that "our mag" had begun to come out once every two months. Two weeks would be highly preferable, to me at least.

I have read A. S. since its inception. Contrary to others, however, I think the magazine is at a much higher level than it was in "the good old days." True, some stories of that period, such as "The Green Splashes," "The Color out of Space," "The Moon Pool," etc., I shall never forget. But on the other hand some real masterpieces have appeared in other issues. Witness "Skylark Three," "Spacehounds of IPC," and "Seeds of Life."

As to how to run your magazine, I think only the editor of a similar magazine would be

qualified to pass judgment, and he would, probably, be biased.

I saw only one familiar name in the current (August-September) issue—that of Walter Kately. The stories were all fairly good, with the exception of "Across the Ages" which I personally consider a little gem. In my opinion Mr. Glasser will go far—we certainly need a good author to add to the regulars. Speaking of regulars, where on earth—or any of the planets—is Edward Elmer Smith?

I have a theory, or rather a vague hypothesis, as to a fundamental difference between gravity and magnetism. It is largely conjecture, but I thought it might prove interesting. It is this: A metallic object passing through a powerful magnetic field cuts lines of force, generating within itself an induced E.M.F. If proper means to tap this current are not supplied, the metal becomes short-circuited and heats itself. In the case of a very powerful field and high speed of the metal through it, fusion will result. Now consider the earth analogous to a gigantic magnet. If it were, no meteor could approach within a thousand miles of it without being heated to incandescence. But since meteors do reach the atmosphere before they begin to heat, it is evident that gravity and magnetism are not alike.

Good luck to a darn good magazine.

Charles M. Seraphine,
Route 2,
Vero Beach, Florida.

(If any assumed critic could compare an issue of 1926 or 1927 of AMAZING STORIES with the present magazine, we are sure that he would find it to have been greatly improved. In view of a very unfavorable even disagreeable comment by another correspondent on Mr. Glasser's story, which the Editors liked very much, we are especially pleased to hear you call it "a little gem." It is such stories of only a few pages that are the most difficult to produce successfully. Certainly, at the present time there is a distinction drawn between gravity and magnetism. Both of them admit of a great deal of theorizing, which may lead to the production of a minimum of facts.—EDITOR.)

A Letter About the Artists' Work in AMAZING STORIES

I hope you will pardon my penned letter, but as I am staying here in the country for a few weeks, there is no typewriter available and I have something to say which I think most of our readers will agree with. Looking through the "Discussions" in the August, 1933, issue I perceive a letter by a gentleman, J. H. Link, in which he apparently attempts to say that any one who has a liking for Paul's, Wesso's, Morey's or Sigmund's refreshing, imaginative and well-executed work is an imbecile. Mr. Link apparently has no appreciation for art of any sort except the high-class

and amazingly "funny" cartoons turned out in the Sunday comics. He does, however, show a surprising knowledge of the latter, at the same time running the earnest, hard-working, and improving work of the science-fiction artists into the ground.

Please, Mr. Link, don't think that because a person likes pictures he is "too dumb to understand what he is reading." The reason your letter burned me up is that I intend to do art work; in fact, have done quite a bit; and any tirade against the honest efforts of artists hits me hard.

I hope that I don't sound like a ten-year-old kid when I say that in my opinion Wesso and Paul tie for first place; Morey takes undisputed second place, and Sigmund and Mueller, along with Briggs, comes third. I consider all other artists in the s. f. field inferior to these.

Robert Ward,
Mayo A. A. County,
Maryland.

(Poor Mr. Link, in expressing his unfavorable opinion of our artists has drawn upon himself what we feel is a deserved scolding, for the four artists whom he names are all very good illustrators. It is a comfort to feel that the efforts of our staff of illustrators is appreciated. We know that full consideration is given to their subjects by the artists whom you mention.—EDITOR.)

Reorganization of "The Scienceers"—A Club Without Dues for Readers of Science Fiction Editor, AMAZING STORIES:

Since the reorganization of The Scienceers was announced in AMAZING STORIES last February, our membership has shown a slow but steady increase; and we are very grateful for the notice you gave us. We believe, however, that many other readers of this magazine in New York would like to join our club if they knew more about us. For such readers, a few words concerning the nature and activities of The Scienceers would not be amiss.

The organization was founded for the express purpose of providing a common meeting-ground for lovers of science fiction, where all phases of this fascinating class of literature may be discussed and commented upon. Meetings are held once a week in a clubroom within easy reach of any metropolitan resident. Membership is open to everyone interested in science fiction and allied subjects. *We have no dues or fees of any kind*—the club is free to all acceptable members.

While our main purpose is to foster fellowship among regular readers of science fiction, we also endeavor to gain new converts to this field by inviting the general public to our meetings through newspaper announcements. Our "missionary work" along this line has succeeded in gaining a number of new followers for science fiction and its leading representative, AMAZING STORIES.

All readers of this letter who would like to join The Scienceers, or investigate the club personally, should send a stamped envelope or a self-addressed postal card to the undersigned for information as to our time and place of meeting.

Allen Glasser,
Secretary, The Scienceers,
1610 University Avenue,
New York, N. Y.

**Notes on the Covers of AMAZING STORIES—
A Tribute to Dr. Keller and Francis Flagg
Editor, AMAZING STORIES:**

The latest issue of AMAZING STORIES is well up to your high standard, but I am sorry to hear that you are now issuing it bi-monthly, instead of monthly.

Your new type of cover is fine, but I think that readers would like it better if you would vary them with the old type cover. I noticed in the late issue of AMAZING STORIES, a Mr. Haggard suggests that you enlarge the Jules Verne tomb portrait and put it on a cover. I should like to add my pleas to this suggestion. It would make an admirable cover picture, as well as intimating to prospective readers that AMAZING STORIES is more than just a cheap, pulp magazine. I'm sure that most of your readers will agree with this.

I consider Dr. Keller and Francis Flagg your best authors. I have yet to read a story by either that I did not like. Bob Olsen's mystery stories are good, only some of them do not seem to contain enough science to be really called Science Fiction.

Emil Pataja,
Miltown, Mont.

(AMAZING STORIES is to continue as a monthly publication. It is only occasionally that two numbers will be credited to one issue. Your suggestion about the Jules Verne portrait as a subject for the cover is a good one; we think it might be very interesting to use it and we will give the matter due consideration. It is easy to give words of praise to such authors as Dr. Keller and Francis Flagg, and as we look over our list of contributors of past years, we find among them many that are exceptionally good and we unhesitatingly place such authors as you mention in the front rank.—EDITOR.)

**A Suggestive Communication About Stories
for Reprinting—Science Fiction and the Film
Editor, AMAZING STORIES:**

"Remember—way back when—

"—'The Feline Light and Power Company was organized'? Ah—those were the stories. Such humor. More stories by Jaque Morgan, even to-day when science fiction is much more advanced than it was then, would better our magazines."

"—Some ardent reader wrote to the early

'Discussions' thus: 'Cosmo Versal, Esq.: I am interested in your Ark and wish you would send me a set of plans for a small Ark which I would like to build to take care of my wife and ————' Ha—Ha, anyway it goes to prove that Garrett P. Serviss *could* write in very convincing manner."

"—'The Treasures of Tantalus,' one of the most interesting stories I have ever read, was published? If reprints are to take up several of your pages' each month, I would suggest 'The Treasures of Tantalus' as nominee No. 1. It is by all means one of the best."

"The Second Deluge" was possibly one, or the one story that deserves the title "The Greatest Scientification Story." Surpassing even "The Moon Pool," and the Ultra-Scientific "Invaders from the Infinite." Another masterpiece that would deserve reprinting.

"The World at Bay" was also an outstanding story, meriting high rewards, and praises.

Going to extremes: "The Color Out of Space" was, in my estimation, the worst, downright "awfulest" story that has ever mutilated your pages—but of course that's way in the past, and doesn't interest us now.

I was overjoyed with the semi-scientifilm (apologies to Forrest Ackerman) "F. P. One," which, incidentally, was written by our old time author, Curt Siodmak, author of "The Eggs from Lake Tanganyika," etc. While speaking of Sciencefilms, I quote from a recent "Movies": Claude Rains, celebrated character star of the New York Theatre Guild, has been signed to a long term contract by Universal and arrived in Hollywood Sunday to prepare for his first screen rôle, that of the ninety percent unseen protagonist in H. G. Wells' "The Invisible Man." James Whale will direct and Chester Morris, Dudley Digges, et. al., will have featured cast assignments as well."

At last we'll have some genuine "Amazons" on the screen.

Just a word about covers: The present covers are "just fine and dandy" but a cover that is a little more adventurous but also scientific, is, I think, more appropriate for our magazine. The November 1928, cover is a good example.

And again, another request for a story in "strips."

Lewis F. Torrence,
Winfield, Kansas.

(We wish to give some reprints in the future as a regular feature of our magazine and your letter is very useful to us as a guide and it is a satisfaction to think that the "Second Deluge" which you mention has already been selected by us as a reprint to go into the Quarterly. "The Color Out of Space" we think was by no means as bad as you consider it. Do you know what the proverb says: "What is one man's meat is another man's poison" and some readers seem to find plenty of poison in our pages and then the peculiar condition often arises where one reader likes what another

reader abuses unmercifully. It follows that it is quite impossible for an Editor to carry out his desire of pleasing everybody. He has to do his best, what we may call his feeble best. The producers of moving pictures are beginning to look to the magazine for subjects. They must receive such an appalling number of offers as to make a selection very difficult and uncertain in results.—EDITOR.)

Interplanetary Stories Asked for with a Suggestion for Dr. Smith
Editor, AMAZING STORIES:

After having read your Discussion Department of "our mag." for many months, I have decided to express my views on your stories for the first time.

Here's the latest of your stories which I believe to be in the "A" class.

1. "Treasure of the Golden God," by A. Hyatt Verrill.
2. "The Purple Monster," by Bob Olsen.
3. "Omega, the Man," by Lowell Morrow.
4. "The Pool of Death," by Bob Olsen.
5. "World of the Living Dead," by Ed Earl Repp.

6. "Planet of the Double Sun," and its sequel "Return of the Tripeds," by Neil R. Jones.

Now for one brickbat which I must toss at you. Morey is a good artist but will he please make his drawings more distinct? If the pictures are bettered in this way I see no reason for anyone throwing tomatoes (?) at your otherwise good artist.

And now for the same bouquets that many A. S. readers are throwing towards your way. Your cover designs took me by considerable surprise when I saw them for the first time. I really had to look twice to make sure that it was an AMAZING STORIES the man sold me. Personally I think Sigmond is doing swell work on the cover designs and they are really taking your "mag" out of the "trash" class beyond a doubt. I am sure that the other fantastic cover designs with a thousand different hues which you had on previous issues frightened many people away from trying it out.

How about some new ideas in the A. S.? Once in a while some author thinks of an entirely different idea but it is not often. How about a great serial with adventurers searching for intelligent beings in different solar systems. Many of us have wondered about other planets revolving around distant suns and if there are higher stages of civilization there. Get the author of "Skylark" to write a new serial on something of this sort and you will please thousands of people who are constantly begging you for a new story by this author.

Anyhow, here's to the best and most interesting magazine on the market today.

H. L. Stollmack,
3464 Knox Place,
Bronx, New York City.

(This letter must give pleasure to a number of our authors and the ones you have picked out for special honorable mention, as we may call it, are those whom we also consider to be of the best. Mr. Morey has already been told that he is apt to crowd his pictures. This seems to be a trouble with artists as we remember that it was one of the characteristics of the illustrators of the early issues of AMAZING STORIES. In a sense it is much harder to draw an illustration with only a single feature in it than where it is crowded with other figures each calling attention away from the defects of the others; the artist's work is really easier with a crowded picture. In a general way, simplicity is harder to attain than complexity. The great works of the world in literature and art are apt to be marked by true simplicity. We have nothing to say about the fish on the July cover beyond the fact that the artist was working on the idea of a certain 20th century new art motive. We are giving up the sub-titles in deference to a number of our readers, who have expressed their dislike of them. You can say good-bye to space fish and to sub-titles.—EDITOR.)

A Capital Letter from Czechoslovakia Concerning Dr. Smith and Our Correspondent, Mr. George M. Turner—Praise for Mr. Campbell's Stories
Editor, AMAZING STORIES:

It was Mr. George R. Turner's letter in the July issue of AMAZING STORIES which provoked me to send you my first letter since 1929, when I commenced to read and enjoy AMAZING STORIES.

Although Mr. Campbell does not need anybody to defend him and can well take care of himself, I have, notwithstanding, to make some remarks in his favor. So, against Mr. Turner's cudgel, I am taking my pen and watch me how I put him to sleep in the third round.

At first, allow me to say that I like Dr. Smith's stories and rate them very high. They are very amusing, but that's all. They are just stories. They don't provide any food for thought, at least not for me.

How different it is, on the other hand, with Mr. Campbell's stories. I really don't remember one, over which I would not meditate even for weeks. What an immense imagination! Only a mind with a capital "M" is able to create such a masterpiece of science fiction as "The Last Evolution." According to my humble opinion, nothing Dr. Smith ever wrote for AMAZING STORIES can compare with it.

One of Mr. Turner's chief objections against Campbell's stories is that they are lacking a plot. May I tell Mr. Turner that the "best seller" for the last few years, Remarque's "All Quiet on the Western Front" and still more its sequel "Der Weg zuruck, I do not know the English translation, as I read it in the original, have no plots at all? And, yet, both

these books are famous throughout the world and no critic ever objected against them as lacking a plot.

As to Mr. Turner's statement that Dr. Smith's yarn is practical, I tried my best to see that "practical" side of it, but I failed miserably. His simple statement will hardly convince me that velocities by far exceeding the speed of light will be attained in the near future with vehicles manned by human beings.

He further says literally: "—that we have arrived at the state of there being nothing new under the sun. Every second yarn is just an old one rehashed—" But, my dear Mr. Turner, taking it this way, the same would apply to Dr. Smith. H. G. Wells wrote his "War of the Worlds," thus probably giving Dr. Smith an excellent opportunity to rehash the theme a little, use some more "rays" and "screens" and to create finally that famous Vorkul-Hexan War in "Spacehounds of IPC." Is that so? Do you believe it, Mr. Turner? Then, why do you accuse other authors of plagiarism!

An amazing thing did I learn from Mr. Turner's letter. Listen, Mr. Editor, I shall whisper it in your ear: Dr. Smith must be one of the fair sex. He really is a SHE! How else could I explain that cheery exclamation of Mr. Turner "Vive LA Smith"?

In concluding this fierce fight with Mr. Turner I beg him not to excite himself over the possibility of Mr. Campbell's "sharpening his teeth for any gastronomic operations" on him. He may rest assured that Mr. Campbell would hardly find him suitable as a digestible morsel.

Mr. Turner is counted out and is carried away unconscious.

Three cheers for AMAZING STORIES and for the almighty Editor who must not disappoint me by non-inserting my letter in the next issue's Discussions.

Lewis Hammerschlag,
6 Rorekova ul.
Kolin n/L.
Czechoslovakia.

(We have received a letter from a friend in Hungary for we feel that those who appreciate our efforts, and we certainly consider that such persons are our friends. We have given here a letter from Czechoslovakia, very well thought out, and as a side issue, interesting to show that AMAZING STORIES is read in that country. The present letter is so long and so well put that it speaks for itself. We especially note that Mr. Campbell received his meed of praise. He undoubtedly has caught the favor of a great many of our readers. We always think of him and Dr. Smith as in a sense, working side by side, for the scenes of the stories are apt to be about the same for one as for the other.—EDITOR.)

An Interesting Letter from Hungary on the Subject of Science Fiction in the Films
Editor, AMAZING STORIES:

First of all I must apologize if my English is not quite as correct as you may await from a correspondent of yours. I hasten to state that English is not my native language. I am a Hungarian and have learned your beautiful tongue in school and by private lessons. Never was I fortunate enough to set a foot into England or America, so my knowledge of English is purely—to say so—theoretical.

I guess you will get the shock of your life to hear from me that it is about six years that I have been a constant reader of our magazine. I have lived in the meantime in about three different lands; for a time I was a subscriber, then again I bought each issue separately. But so much is sure: I never missed one volume. There were times when I could afford even to buy the Quarterly and the one Annual which appeared.

If you intend to print this letter in your column I am afraid you must smooth out my style a bit because otherwise your readers would be amused about me.

Don't expect me to throw any brickbats or flowers at you. Enough to state that there is no similar magazine on the European market, and, since I happened to dig out your publication in a special book shop for foreign literature, I had no idea that such stuff was published. Of course, as a youngster I read eagerly Verne, Wells and the other authors in book form, but short stories were fully unknown to me. Continue your good work and don't listen to unduly bad critics. It is easier to criticize than to make it better and I wonder what you readers, who are so ready to throw their brickbats at you, would do in your place. It is only natural that some of your stories are better than others and I feel that reading this sort of literature for a longer period makes one a little accustomed to it and the reader is not so much impressed with the plots as he was earlier. Scientific errors and discrepancies are very likely to intrude in the stories, because dealing mostly with theoretical speculations the author is apt to carry his point just a bit too far in order to make his point clear and his plots new. Again for a reader with a scientifically trained mind it will be always interesting to discover where the true facts begin to mix with the pure fantasy and I consider this sort of analytical reading a good training and excellent pastime; somewhat of a scientific puzzle, polishing your mind and furnishing at the same time amusement and distraction. From this standpoint the worse stories could be considered to be the best, providing the most possibilities of detecting the errors in them, and thus giving food for exercise in critical brain training.

However, the main cause of my writing to

you is quite another one. This is the first time I take the liberty of addressing you and this particularly because of the discussion of the possibility of science fiction movie pictures. I happen to be a movie amateur (in fact I am a member of the A.C.L. New York) and can say without boasting that I succeeded in winning several prizes, also first ones, in the yearly contests covering this field in Europe. Well, in short, I would suggest that some movie clubs, which are very numerous in your country, as I understand, take up the job and try to turn out some outstanding feat concerning this style. I am trying this summer to make such a picture myself and if it is a success, I consider making a copy of it and sending it over to my American friends. Generally, however, in the professional movies this subject is quite abused and mistaken for the so-called "horror pictures." Let me make my point clear to you. I do not consider "Frankenstein," "Mr. X," "Dr. Jekyll and Mr. Hyde," "The Mummy" as science fiction plays, because the "horror" motive is too much stressed in them and their scientific basis is very weak. Aside of one basic idea nothing really confirms the fact that these pictures want to be scientific. Now there is another sort which suits me much better. For example, "The Lost World," "Metropolis," "The Woman in the Moon," "Just Imagine." I hope you understand what I want to say in making these distinctions between these pictures. It is not always necessary for the public to come out of the theatre shuddering and shivering, or, if the director has missed his point, laughing at his nightmarish imagination. As a pretty tough fellow and knowing all the tricks of the art, I can frankly say that the intended effects go wrong with me and—curiously enough—with all my acquaintances and friends. Therefore, no horror without special and well founded reason; if there is one—then go ahead—but otherwise hands off!

Movie makers intending to begin science-fiction pictures will do well in considering some points which are not quite so obvious for the moment and which are the principal causes of difficulties and failing even with the professionals. It is very easy for a good author to depict the most uncanny lands, but it is another thing to put these things before the camera in reality. The writer can be vague about several points, he can describe them in a most uncertain way. Characters may be shady in their apparition, not clearly defined and evasively described. Machines are easily imagined but difficult to actually build up so that they seem real. This will be the principal difficulty in getting good science-fiction illustrators. When making a movie, these difficulties are often under-estimated. I do not refer to the question of how the amateur can afford the money for the sets (because with the known

process works) all these questions can be easily settled, and I don't ask where he gets his actors from (this being a minor point for a good director), but I ask him if he can imagine with 100% exactitude just how things and persons, animals, etc., must look. All our imagination is based and put together from well known shapes and figures. To describe something, new and unheard of; may be difficult in itself; but to make reality of these new forms, which shall contain no known components at all, is much more insurmountable. Therefore, making movies dealing with science-fiction motives is a field which only the most experienced and daring amateurs or professionals should try. The maker of such a film must be thoroughly acquainted with the movie technique and be an ardent reader of all sorts of science-fiction literature.

Now, I think, I have abused your precious time long enough, so I close this rather lengthy epistle and I would be delighted to see it appear remodeled as refers to right English—in your columns.

Andrew Lenard,

Budapest, Hungary, Europe.

Anker Koz, I. 3.

(This letter from a reader in Hungary, who is a native of that country and has learned English in a school and by private tuition, is very interesting as an example of what can be done in learning an alien language. We have made a few very trivial changes in the wording of the letter, but as it goes before our readers it is virtually as the writer intended. It is a remarkable example of what can be done by study. The distinction you draw between what may be called the "horror" motives in films and true science fiction motives is very good. One of the troubles of the Editors of AMAZING STORIES is to get good fiction embodying science. The author of a story is very apt to run away from the scientific aspect and simply produce a romance. The description of the troubles of the producers of films is quite vivid and you certainly appreciate the difficulties inherent in it.—EDITOR.)

A Correspondent from "Down Under" Writes a Most Interesting and Encouraging Letter Editor, AMAZING STORIES:

I am hoping that you will find room for this letter in your "Discussions."

I spend all my spare time searching the City of Brisbane's various book-shops chiefly the second-hand ones) in the hopes that somebody has dumped a few issues of A.S. that I have not read!

The stories in your "mag." are like the sailor's beer; only two kinds—good and better.

For some reason it is not easy to get A.S. out here and we have to put up with missing odd issues, still I get quite a lot of fun looking for them. Just finished the July number (only

got it last night, July 28th) and give it my O. K. About that "Skylark" yarn, I haven't read it so you print it and to — with the rest! Selfish! Well maybe.

I have quite a pile of A.S. and other scientific mags. but yours is the best.

Many readers growl about accuracy in stories. Why worry as long as the yarn's a good one! The stories I liked best this year are: "Beyond the End of Space," "Tomb of Time," "Stellarite," "The Eternal Mask," "When the Comet Returned," "The Three Sons of Ev," "The Cavern of Thunders." I missed the January and June issues but may find them somewhere.

Your new cover is a great improvement on the somewhat hectic ones of the past.

Now what about a sequel to "Stellarite," the bit about Venus has made my mouth water!

Well, here's cheers and best of luck to A.S. from "Down Under." May I miss no more issues!

Yours till Angels grow whiskers,
N. C. Marris,
care Post Office,
Strathpine,
N. C. Line,
Queensland, Australia.

(In the last paragraph of his letter, Mr. Marris wishes us the best of luck from "Down Under," which is a picturesque expression, we suppose, for the Antipodes. The people from "Down Under," who write to us seem always to like our work and we certainly have received very nice appreciation from these distant readers. We are naturally sorry that you have trouble in getting the magazine and judging by our files Australia is certainly entitled to have a reasonable number of copies. It seems to us that your best plan would be to subscribe and have it delivered to you at your residence.—EDITOR.)

An English Correspondent Who Pays a Tribute to His Countryman—More Wanted from the Author of "The Intelligence Gigantic"
Editor, AMAZING STORIES:

I have read AMAZING STORIES for years, and I feel moved to write because I have just read the completed story entitled, "The Intelligence Gigantic," by John Russell Fearn. In my opinion it ought to be placed along with such works as "Moon Pool," "Skylark of Space" and others. Mr. Fearn may be a new writer, but I don't think he will stay new for long with that peculiar classic touch he seems to possess, and more than usual power of description. He already ranks first class, as you admit yourself, Mr. Editor, in your introduction to his yarn.

I am very glad to know that he is a fellow-countryman, and certainly hope to hear more of him before long. He seems to be the first new author to commence with a serial.

By the way, "The Intelligence" is far too interesting and brilliant a creature to be wiped

out so easily. Surely such a brain as that ought to return—and with a vengeance. And "What-a-Man" Kal ought to be heard more of. Come on, John Russell Fearn, and let's have a sequel.

To the "Intelligence!"—May he return—

F. Loreng Tobe,
Whalley Range,
Manchester, (Lancs.), England.

(We are always glad to get good stories from England. It is interesting to see how science fiction is treated by writers across the ocean. We find that our magazine has readers all the way from Australia to Hungary and to the British Isles which salient points we select merely to indicate that it circumnavigates the earth. It does, to some degree, appear to us that the "Intelligence Gigantic" experienced such a fall from power that it would be hard to use him as a leading figure again. We hope soon to give other stories by Mr. Fearn.—EDITOR.)

A Young Reader Wants Some Correspondents
—An Appreciation of Our Efforts
Editor, AMAZING STORIES:

This, as you see, is my first attempt at writing to you and as I am only 16, I would be quite proud to see it in print. I have read AMAZING STORIES for several years and I still hold it above all other magazines.

The only fault I have with it, which is very trivial, is the sub-titles, they seem to make the stories go faster.

The August-September issue is an excellent one—you seem to be trying to outdo yourself. Here is my list of the stories as I liked them: 1. The Meteor-Men of Plaa: 2. Children of the Great Magma. 3. The Essence of Life. 4. The Silicon Empire. 5. Adrift on a Meteor. 6. The Pellucid Horror. 7. Across the Ages. 8. Head Hunters Fooled and Foiled.

I would like to see more stories like the "Skylark" stories and "Via the Time Accelerator" by Frank J. Bridge in the January, 1931, issue. This story I read three times before I thought I understood it—each time I read it the more I enjoyed it. It seemed to be an exceptional story in both science and fiction. Please—can't we have another story like that one

I have never been disappointed with AMAZING STORIES, because if I did not like the stories, the Discussion Department was there and is enjoyed by myself. I like to read the different readers' opinions of the stories and the way they "razz" other writers.

It certainly was a shock when I saw the new cover on the magazine—I did not recognize it at first even though the name was there in big letters. I soon got over it and I like the covers now, it sort of gives the atmosphere of the magazine a futuristic and scientific one. I see though the last issue has combined the new and old type covers and is very nice looking.

I would like to have someone write to me.

Kenneth Harrison,
72 Laurel Street,
Ashland, Oregon.

(We are glad to print your letter and to give you the reason you suggest for pride. Such letters as yours we always like to get and are always willing to print if there is room for them. Such suggestions as yours are a direct help to the Editors in making a selection of stories.—EDITOR.)

A Delightful Letter from a Reader of the Fair Sex—She Almost Apologizes for Some Brickbats

Editor, AMAZING STORIES:

Dear Sir:

May a girl advance her opinion of "our mag," without being torn to shreds by ravening hordes of readers?

I do not like Morey's illustrations. His idea of the human form is something unique. I should hate to meet one of his heroes on a dark night. If he would leave out human beings and stick to buildings, he'd be all right.

The covers which Sigmond has been doing are deserving of the highest praise, but please have him continue. If we must have Morey, can't you restrain him from doing covers?

I feel that I must plunge my nose into the slang affray. I distrust any hero who greets the heroine with an impassioned burst of oratory inspired by the fine weather, and who, scorning contractions, must needs articulate each word carefully and in a painfully stilted manner.

The main reason why I like Dr. Smith's work is that his characters speak like ordinary humans, not like automatons. I hope you'll reprint his *Skylark* series, because I began reading AMAZING STORIES too late for them.

The Swordsman of Sarvon ranks with *Spacehounds of I.P.C.* in the serial class, while the Professor Jameson series, and *The Power Planet* by Murray Leinster are the best of the stories.

Please forgive my brickbats, for I consider AMAZING STORIES the finest magazine of its type, and wait impatiently each month until I can be "amazed" again. I like AMAZING STORIES because the stories are clean and, for the most part, manage to avoid the love question. It really helps some stories, however, even though the heroine is dragged in by the scruff of the neck, deposited unceremoniously in the midst of the most exciting situations, and told to look helpless, or helpful. But you will have to admit that even scientists require someone to sew on their buttons, mend their socks, and be properly impressed with inventions and discoveries.

Anyway, I'm very fond of AMAZING STORIES, and it can hardly be made to suit everyone. My complaints are more or less superficial.

It wouldn't be a real letter to the Discussions without some grievance.

Please pardon this somewhat long winded blurb (if you've bothered to read thus far) and believe me to be one of the most loyal of your many readers.

Margaret Young,
55 Main St.,
Norwalk, Ohio.

(We have rather a limited number of correspondents of the fair and highly interesting sex. But when we do get a letter from one of your "persuasion" it is always quite delightful. The love question, as you call it, when it does appear in our stories, you will find to be always of an unobnoxious description. We can inform you that the "Skylark" series of stories is in contemplation for a reprint at a not distant date. As far as brick-bats are concerned, we shall hope to get more from you. We like them as thrown by you. EDITOR.)

**"The Intelligence Gigantic" Commended—
A Very Flattering Appreciation**

Editor, AMAZING STORIES:

I have just finished reading one of your stories called "The Intelligence Gigantic," written by John Russell Fearn, and liked it so much that I think it only fair to write and say so. Dave is such a very fine character and his understanding way of calling Nan "old girl" makes the good fellowship between them as husband and wife appear so homely, and lends that intimate touch so necessary as a light relief amidst such a scientific story.

I, for one, am hoping that Mr. Fearn won't be long before he does it again. Not only do I like his original idea of making the synthetic man, but his power of expression typifies the true artist. Here is luck to him, and to me if he gives a sequel, which I hope he will.

Your magazine is an unending source of pleasure as well as interest to me and I learn quite a lot from studying the scientific sense of it. I am grateful for all the trouble you and your staff take to entertain and please.

Francis Flan,
Bispham (Lancs.), England.

(Fern certainly did a very fine piece of work in "The Intelligence Gigantic." We are sure you will hear from this author again. One of our troubles is that owing to its limited size, AMAZING STORIES cannot take care of all of its excellent authors, but we are making every effort to keep them as our writing staff, a staff always open to new membership.—EDITOR.)

**A Good Word for Dr. Keller—
No More Cross-Headings**

Editor, AMAZING STORIES:

I would like to compliment you on your partial return to the old cover. I happen to have the nerve to be one of the radicals who opposed the new cover. But after all the stories

are what make the good magazine. All your stories were good, but Walter Kateley's story was the best. It's an old plot but it's still good.

In your last month's (July) issue Raymond Z. Gallun certainly wrote a pointless story, but it was evened up with David Keller's. You can always depend on him for a good story.

As my final brickbat I would like to complain very strenuously against your sub-headings which appear after every sentence or two. You can read these headings and understand the story without reading anything else. And another thing, the element of suspense is necessary in a good story and with the sub-headings this entirely disappears, thus reducing a good story to a mediocre one.

Bill Parry
Box 96,
Pacific Palisades, Calif.

(We have headed this letter with reference to what you say about Dr. Keller. He may be correctly termed a true short story writer. He has a particular talent in bringing about a striking end to his tales. It will please you to know that we have definitely abandoned all sub-titles, so you can read your stories in peace.—EDITOR.)

Praise for Some Recent Stories and Good Words for the Authors

Editor, AMAZING STORIES:

Have just finished reading the Aug.-Sept. copy. This issue was certainly interesting and I hope the good work continues.

Two stories very much appealed to me and they were along similar lines.—"The Meteor-Men of Plaa," by H. Kostkos, and "Adrift on a Meteor," by J. Winks. We trust that we will be able to read more stories by these writers. Since it was our first story by Kostkos, I thought that you gave him a big lift by also making the cover page a scene from his story. It sure must have made him feel good. Don't let him get away from us as long as he is able to handle subjects as ably as he did this one.

F. V. Holman,
Kansas City, Mo.

Both the authors you name are new to our readers and we are sure that you will hear from these writers again at an early date. We are sure that Mr. Kostkos will soon favor us with another story. He is a practising engineer of very high standing, so he has an excellent basis for story writing for our magazine.—EDITOR.)

All Copies of AMAZING STORIES and Quarterly
and Annual for Sale
Editor, AMAZING STORIES:

For the benefit of those of your readers who "arrived" too late to read the very early issues, I wish to state that I have a complete set of AMAZING STORIES, every issue, which I will dispose of very reasonably, either as a whole or by single issues; also every issue of the Quar-

terly and the Annual, all in very good condition.

Henry Hasse,
1236 Wade St.,
Indianapolis, Indiana.

An Interesting Letter About Writers of Science Fiction Stories

Editor, AMAZING STORIES:

I have been a reader of Science Fiction for some time. I cannot say that AMAZING STORIES is the best magazine although it certainly is swell. I really prefer the former type of cover as it is easier to distinguish one issue from another at a glance. Anyone who knows anything about art can see that is far inferior to Paul's work. Although Paul used to be poor, his work has greatly improved. Take a squint at some of his present illustrations in your rival magazine. Some of Morey's pictures are excellent but most of them are carelessly done. "The Stone from the Green Star" does not need a sequel as it is a completed adventure and a sequel would spoil it. Jameson's adventures with the Zoromes should be continued, however. Bob Olsen's detective tales are good. I believe he is your oldest author (not in years). Neil R. Jones is also very good. Ed Earl Rep is another star. "Omega, the Man" was unusual.

In my opinion the most unique author of scientific fiction is Jack Williamson. He is having more stories published than any other S. F. author with the possible exception of Clark Ashton Smith and Ray Cummings. That is probably why many of his stories are not up to the standard set in "Twelve Hours to Live" and "The Stone from the Green Star." Williamson is the only author writing for all of the five Science and Weird Fiction magazines. Lately he has concentrated his good yarns on a certain Weird fiction mag, which is probably why "In the Scarlet Star" was comparatively punk. If five years passed on the Scarlet Star during the minute, the hero's friends in the Star would certainly have kicked the bucket in the time it took him to relate his tale. I hope to see Jack Williamson at his best in AMAZING STORIES soon.

I think the two best authorities on the fourth dimension are Bob Olsen and Miles J. Breuer. Olsen has not delved deeply into the Fourth Dimension lately. "The Man Who Annexed the Moon" and the Great "Four Dimensional Robberies" by Olsen and "The Captured Cross Section" by Breuer explain hyperspace, so simply that a baby could understand.

Kenneth Sterling,
2350 Broadway,
New York, N. Y.

(Again Jack Williamson gets great praise. We consider him definitely one of our authors even if he does favor other magazines with his writings. We appreciate your approval of our other authors for we feel that we are perfectly well entitled to claim them as such.—EDITOR.)

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF MARCH 3, 1933,

Of AMAZING STORIES, published monthly at Chicago, Ill., for October 1, 1933.

State of New York }
County of New York } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lee Ellmaker, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMAZING STORIES and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Teck Publications, Inc., 222 West 39th Street, New York, N. Y.; Editor, T. O'Coner Sloane, 222 West 39th Street, New York, N. Y.; Managing Editor, None; Business Manager, Lee Ellmaker, 222 West 39th Street, New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Teck Publications, Inc., 222 West 39th Street, New York, N. Y.; Lee Ellmaker, 222 West 39th Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

LEE ELLMAKER, Publisher.

Sworn to and subscribed before me this 19th day of September, 1933.

ABNER GERMANN, Notary Public.

Queens County Clerk's No. 2417.
Queens County Register's No. 2138.
New York County Clerk's No. 304.
New York County Reg. No. G279.
My Comm. expires March 30, 1934.

PATENTS

TIME COUNTS in applying for patents. Don't risk delay in protecting your ideas. Send sketch or model for instructions or write for FREE book, "How to Obtain a Patent" and "Record of Invention" form. No charge for information on how to proceed. Communications strictly confidential. Prompt, careful, efficient service. Clarence A. O'Brien, Registered Patent Attorney, 308-F Adams Building, Washington, D. C.



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